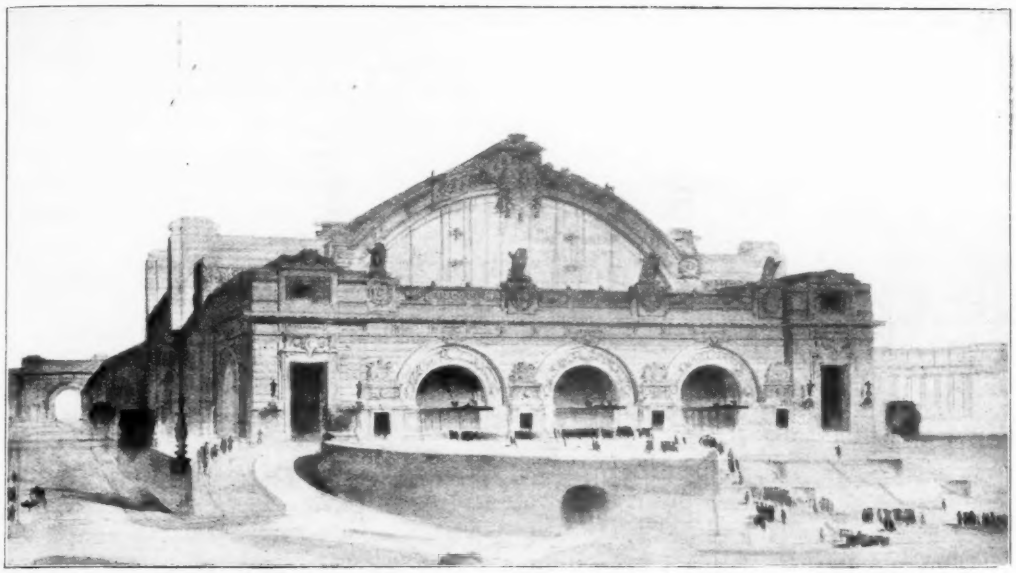


From the late Mr. J. M. Whitelaw's Design for a Terminal Railway Station, awarded the Soane Medallion 1913.

LONDON RAILWAY STATIONS.

By Paul Waterhouse [*F.*]

Read before the Royal Institute of British Architects, Monday, 23rd February 1914.

WE are to consider this evening the railway stations of London. There are, it seems, 299 of these within the metropolitan area. It is not, therefore, my intention to devote even a few minutes to each. I propose merely to offer some considerations relating solely or chiefly to the greater termini of which we have a dozen*: Euston, King's Cross, St. Pancras, Liverpool Street and its ally, Fenchurch Street, Charing Cross and its Cannon Street appendage, Victoria, London Bridge, Paddington, Marylebone and Waterloo.

The terminal stations of London are the points at which the greatest city of the earth's best country gives its welcome to the world at large. Perhaps, therefore, the first thought which arises in contemplating them is the question, "Do these welcomers give their greeting in terms worthy of the city that they represent?" It is a rule of hospitality that, at the threshold, we should show to coming and going guests a fervour at least as warm as the esteem in which we hold them. In fact, custom bids us go farther; and we are not considered hypocrites if to the arriving and departing stranger we somewhat exaggerate the true degree of our regard.

It is, therefore, quite proper to ask whether it is a discovered fact that foreigners seeking our heart of Empire, and provincials approaching their capital, receive from these ante-chambers of arrival an impression of warm-hearted and enthusiastic reception, to which nothing else in their sojourn quite approximates, save the equal geniality of the scene of departure.

I fear we must admit that London prefers to enhance the climax of its hospitality by showing to the approaching pilgrim less cordiality at the outset than is extended later on; and that the retreating visitor often finds the pangs of separation modified by the sense that steals over him during the final ten minutes of his stay that, after all, London is a fairly ugly and inhospitable spot.

* They are officially recognised as 16 by the Traffic Commision Report, 1905. London Bridge and Victoria are reckoned as two each, St. Paul's and Holborn Viaduct are both elevated to full honours, and so is Addison Road. Fenchurch Street is not reckoned in the list of main terminals.

Having admitted these things, I am not intending to suggest either that all our termini are disgraceful or that even the less-comely stations are without some justification for their uncomeliness. I am merely wishing to point out in some of the remarks which follow that although in railway stations, as in other things, London has paid the penalty which falls upon pioneers—the penalty of being too easily outpaced by its successors—there is for railway stations, as for all other products of human contrivance, an ideal which is worth the seeking, even if it cannot be found, and, if found, cannot be copied.

Let us briefly take a survey of these twelve old friends, giving them praise and blame as they may seem to deserve them.

Euston comes first, being the terminus of that ancient London to Birmingham line which marked the earliest beginning of the steam approach to London. To Euston I do homage. There was nothing mean about Euston's birth. The London and Birmingham Railway meant big things from the very beginning. It is true that for years after the inauguration of the line the trains were brought from Chalk Farm to Euston by traction, not by locomotives, owing, I believe, to the diffidence of Parliament. But Euston Station was meant to be, and was, worthy not only of the great movement thus initiated, but of its future. That noble hall* and that splendid Doric portico (since outraged by encroachments) bear a ratio to the line then existing glorious out of all proportion when compared to any subsequent displays of London railway architecture. The platforms and their roofs certainly are an anti-climax; but Euston is setting its house in order, and it is not fair to judge of the station by its present condition; great improvements are in hand, and I, for one, do not yet know to what degree of amelioration they may tend. The glazed roof problem is a difficult one, and it cannot be said that in this matter we have always gone from good to better. St. Pancras, one of the earliest roofs, is still, to my mind, far and away the best. Sir Gilbert Scott, in the full blast of Gothic energy, astonished the railway world with a quasi-mediæval external elevation, and the engineer, far from letting him down with a disappointment, played up to him in an extraordinary manner. Instead of designing a commonplace truss and decking it with scraps of ecclesiastical castings, he made the discovery that a giant pointed arch, with a concealed tie beneath the rails, was the form best suited to his needs. The resultant effect is amazing. I have no hesitation in acknowledging that for grace, beauty of form, and sheer magic of fitness the iron and glass roof of St. Pancras Station gives me unqualified pleasure. It has an élan and charm which would be convincing even if it were, as I once thought it was, a bit of sacrifice to Gothic etiquette—but when one discovers that it is no mere concession to style but an example of direct, untrammelled engineering skill, the respect due to it is spontaneously given.

The only completely new terminus built under the eyes of my own generation is Marylebone, the London goal of the Great Central. To it we must look for London's latest utterance in station craft, and we look—with disappointment. It was conceived and born under the ægis of that mischievous theory that, if only the street front of a station is masked by an ostentatious hotel, the station proper (or improper) can be left to the—engineer.

There is no reason, I think, why I should not speak courageously on this point. I will admit freely that stations have primarily a utilitarian function to perform, also that railway companies are not primarily either philanthropists or patrons of art. But the doctrine that, in what I may call the platform part of a station, beauty and design are unimportant is, in London at least, an unworthy doctrine. We architects know quite well what we mean when we say that there is no class of public building to which it is impossible to impart at least distinction. Railways have rather overlooked the fact that mere size instead of excusing ugliness conveys an absolute obligation to avoid it.

* The hall is, I understand, later in date than the portico; this accounts for their not being axial with one another.

We have in the stations a repetition of the old and sad story of the Thames bridges. The discovery that iron was cheaper than stone for the task of crossing the river was seized all through the latter half of the nineteenth century as the basis of a horrible argument; the premises of that argument were false, and the conclusion—which took the form not of a spoken word but of a series of indecent facts—is now awaiting refutation. It is a good rule of civic decency that beauty is always possible in small things, but that in big things it is imperative.

Paddington, perhaps you will say, is a bad shot at the beauty target. Well, I admit it is, but at least it was a shot. Wyatt was called in, and perhaps Wyatt failed. His affectation of the Moorish mode was unhappy—but it was well intentioned. There is certainly grandeur in the big arcuated spans of the glass roofs, which are worlds removed from the timid and prosaic horizontality of our later efforts. Paddington again almost enters the region of romance from its enshrinement in Frith's picture. How we have all derided Frith! I wonder if his day may not yet be coming.

King's Cross might be named after Landseer's picture, Dignity and Impudence. One can hardly find among the street sights of London a more striking combination of vigour with debility than the south elevation of this terminus. In the sheer strength of direct purpose the engineer flung up those two Cyclopean arches, and in between them he set out to design an architectural climax which should unite and crown the whole design; the result was failure—he turned his drama into a farce. I would guarantee that the offer of a prize of five guineas to architectural students under twenty-five would produce more than one good scheme for raising this elevation to nobility at a cost of under £500. But why, I wonder, has King's Cross forgotten all this time that it has a forecourt—or at least a foreground. For many a year this rather shapeless but, I suppose, valuable site was dedicated to the display of rustic seats and summer houses, the wares of some favoured merchant. At last, when tube railways came into use, we were made aware of the prospect that this fruitful field would give birth to a little stationette. The stationette arrived—rather more highly coloured than we expected; but it evidently took everybody by surprise, for the position which it assumed bids defiance to any possible scheme for laying out this open space in some sort of relation to the great building behind it. I confess, I am amazed.

Euston Road was protected as to its width by Act of Parliament, yet so valuable was the frontage soil in that road that in course of years every front garden was built over with shops, and the records of the late Metropolitan Board of Works are darkened with breaches of this particular trust. The Board gave way to the land grabbers, with the result that the County Council has had no inconsiderable difficulty in stiffening its own back to resist or repair these and further encroachments. Land, in fact, is in this district valuable, yet a spare corner of important frontage is first wasted and then misapplied. London is a wonder-city.

Of Charing Cross and Cannon Street we shall speak later. Charing Cross we know succumbed (as regards its glass and iron roof) to premature decay; and was rebuilt in the manner which I am still unwilling to regard as the last word in the steel artist's vocabulary of beauty. Cannon Street still maintains, when viewed from the river, an almost picturesque suggestion of one of the minor entrances to the Infernal Regions.

To Holborn Viaduct I will be generous, and forget its existence. I have always admired the architecture of its hotel front to the street, but as a station one can only say of it that it is quite conspicuously inglorious.

Civilisation has many grudges against history. One of these is the regret that railways and steam were not invented in the time of the Romans. There can be no doubt that if this had been the case the Romans, true fathers of our European economy, would have left us a lesson in the laying out of railway routes; little doubt also that some of their actual railway stations would remain. A railway station would at least wear as well as a basilica or a public bath. Here and there over the continent of Europe—perhaps even on our own island plot—there would still be standing vast majestic piles of

monumental masonry serving at the present day the very purpose for which Rome had reared them. The advantage to us would be immense, for not only should we find in them that ancient sanction without which, as architects, we are so often timid, but also, and conversely, we should be rid of the excuse which is supposed to justify the deformity of all architecture connected with distinctly modern needs. The Briton discovers the steam engine and proceeds to make use of it, yet, in spite of the conservatism which compels him at the outset to call a railway carriage a "steam-coach" and to model it on the lines of a four-in-hand "Tally ho," he proceeds in contrariety to invent and to reverence a doctrine that steam-travel being a modern contrivance it may or should be housed in a sort of futurist building craft—in other words, that its attendant architecture should be no longer architecture at all [that is, building based on the tradition and the nobility of precedent], but building of which the form and genius are inspired by spiritless expediency—in fact, by that lower grade of engineering which lacks culture. All honour then to Euston, St. Pancras, and Paddington, which, in their degree and after their kind, withstood this untoward modernism. Waterloo, the modernisation of which is rapidly approaching a measure of completion, had a good chance, which for a time at least it missed. The terminus of the South Western was, up till the year 1848, a rather stately little station at Nine Elms, the front of which was reminiscent of the portico of Sadlers Wells Theatre. When Waterloo superseded this unassuming erection it had to grapple—and the cab horses took their fair share of the grappling—with the problem of the high level roadway.

It is obvious that whenever a railway line makes up its mind to enter the heart of a metropolis it must do one or other of three things. It may, for example, come in on the level, in which case it either obstructs existing streets and roads or threads an ingenious track through a roadless region. Euston is on the level, and solves some of its difficulties by frank obstruction, others by diving under the primrose roots of Primrose Hill.

In default of coming in on the level it may sink below the general surface in a cutting. This was Paddington's idea—it is also the device adopted at Liverpool Street. But the measure is only a half measure, and the roads which cross the railway outside the station have to climb for the necessary bridge height. The third course, which was adopted by nearly all the South London lines, is a courageous policy of overhead travel, necessitating miles of arched and bridged causeway.

It cannot be said that these long rows of arches have added to the beauty of the Surrey side, though I imagine that in a ruined London some centuries hence they may possess a pictorial and antiquarian interest not unlike that of the aqueducts on the Campagna. It is this high level device which makes possible the crossing of the Thames at Charing Cross, Blackfriars, and Southwark.

There is, of course, a fourth expedient, not yet adopted in London, which I may call the policy of the Quai d'Orsay. In idea this is splendid—it is partly splendid in execution. The trains are kept below ground, the booking offices, waiting halls, and administrative quarters being all on the street level. Thus space is halved, or nearly halved, and the upper level departments gain greatly in dignity. But the train platforms suffer in light, comfort, and convenience. Moreover, it is impracticable to have steam engines employed in these basement domains, and it becomes necessary to exchange steam for electricity at a point outside the underground portion of the route. Whenever, and if ever, all trains are run by electricity, this device will no doubt grow in favour.

The Waterloo (to return to the South Western) which first superseded the Nine Elms terminus was, as we know, a very poor and mean affair. But recent years have shown a very hearty development, and the new station has about it many of the elements which one hopes to see in the station which is aware of the dignity due to its size.

Victoria, again, is a notable instance of reconstruction. The gentleman who designed the blank wall in Buckingham Palace Road did it right nobly, and there are good points about the main front. It is true that Victoria's iron roofs, though lofty, are uninspired, but the really worst fault of the station is its inordinate size or, rather, its inordinate length. The lack of width had to be

compensated for by forward extension, with the result that the distance from the booking office to the railway carriage is in many cases immense. A wider station farther to the south-west would really have been more satisfactory. "Let them all say what they can, 'tis for one end—the use of man." Here the use of man is not always met, for it is in a small way a hardship after buying a ticket for Brighton and allowing the necessary two minutes' margin of time to be told that the first instalment of the journey has to be done on foot and at quarter-mile pace.

Liverpool Street is also a monster, but it, you will have noticed, gets over its difficulties by lateral expansion, and here the man who happens to know at which side of the station it is best to enter may often save the precious minute necessary to his object. The high and low level entrances for passengers and the bridge connections from platform to platform are cleverly arranged—specially in view of the fact that the great bulk of the passengers are luggageless suburbans.

The station or, rather, stations at London Bridge are relics of the intermediate barbarism between the prophetic courage of Euston and St. Pancras and the mean modernism of St. Marylebone. We are a very unambitious people, and in public matters very ungrasping. London Bridge Stations are a fair type of the kind of thing we accept as good enough for us. Architecture is either worth nothing in the scheme of civic economics or it is worth a great deal. If it is recognised as acceptable and permissible, I should venture to say that no building within the metropolitan area which is visible to a minimum of a thousand people per diem and is worth a minimum of a hundred thousand pounds should under any consideration whatever run the least risk of being justly described as unarchitectural. Under this most moderate canon I excommunicate the seven acres of railway stations at London Bridge.

But apart altogether from the question *what* a railway station should be, there is another question —and one which is at least as important—namely, *where* the station or stations should be. In fact, the great question of disposition—and this is after all of as great importance.

I believe there are still a few people who imagine that in a perfect and Utopian London there would be not many termini but one. In a few seconds we will dispose of this strange idea. Centralisation of either roads or railways is, except in a very small town, a terrible mistake. We can prove this —as regards roads—by standing for ten minutes at the Mansion House. There—as interesting relics of London's almost prehistoric littleness—we find a group of supposed desiderata with a cluster of roads centering upon them. Ancient tradition prescribes that the house of the chief officer, the treasury of the nation, the seat of commerce, and one or more places of worship should be grouped round the nucleus of the town, and that for purposes of swift access to them every main high road should impinge on the same point. But it may be taken as an axiom of town planning that, as soon as any town is as big as, let us say, two miles square (or four square miles), such a concentration becomes not a convenience but a horrible incommodity. Nay, more: when a town reaches the size of modern London—or even half that size—the official buildings, which originally were things to be sought, become things of little interest to the majority or even things to be shunned. I am, I hope, a law abiding citizen, a Christian, and in a small way a money saver, but my only visits to the Mansion House have had no connection with the Lord Mayor's government of the City, my visits to the Bank have been merely calls on the architect, and my churchmanship is better met by churches other than those which cluster round the Royal Exchange. In fact, the converging of roads opposite the Bank is to nearly all of us nothing but an impediment in our journeys through the City: and even if the buildings I have just mentioned were all of occasional importance to our business or spiritual life they would minister to our needs much more expeditiously if they were all at least a quarter of a mile from one another. Similarly, the concentration of our railway termini into a single station would have almost incalculable disadvantages. The station, in the first place, would be so large that on starting a journey from it we should all have to walk on an average a furlong to reach our train. In the second place,

none but habitués would have a reasonable chance of finding a train at all, in spite of indicators. And thirdly, the confusion and crowding would be very great.

No; the central station would be a vast and terrifying nightmare of disorder. Its size, according to moderate computation, would be 100 acres, and if one comes to think of it, the result of its existence—wherever you place it—would be that the great majority of people would complain that it was too far from the place at which they wish to be landed. Another trouble would be that the discharge of so huge a multitude at a single spot would result in a great overcrowding of the means of local transport, omnibuses, trams and tubes, at that centre.

Of course, it may be argued that not every one would travel to or start from the terminus, but that many would stop short of it. In fact, I can imagine some designer of London improvements taking a map of London and doing with it something like the following:—

Link, he would say, Paddington with King's Cross, throwing in the Midland Railway as a branch. By an equally bold sweep join the Great Central line to the North Western. Then fling a courageous arc of rails from Victoria to Liverpool Street, and bring in branches from Waterloo and London Bridge, and with the result that you find everything converging in Covent Garden.

There you have your central station, but to avoid the inconveniences arising from undue centrality—such as the grumblings of the West-enders and the East-enders, and the Stock Exchangers and the Gray's Inn architects, none of whom want to be shot out at Bow Street—you can retain each of the old termini as a kind of penultimate terminus. In fact, just as there now is an Ealing and a Westbourne Park on the Great Western, a Willesden and a Stratford on the North Western and Great Eastern, so you would have—only farther advanced—new London half-way houses made of the old terminations.

Moreover, says this wise fellow, you can link all these penultimates up by a circular tube touching each one in the way that is now being tentatively and fragmentarily attempted by the present disjointed tubes.

Again, he will add, my central station enables easy transfer at the Covent Garden junction between every main trunk line.

Well, in the first place it must be pointed out that the objection to the central station would still remain on the ground of its abnormal size, and yet another trouble would have to be faced. Railways, as we have recently noticed, can only cross streets by going over them or under them. These bold curves and dashing branches would either require to be carried overhead like the grim viaducts which disfigure southern London, or they would have to plunge below ground—in some cases below Thames—and would call for a treatment like that which we have just now mentioned as prevailing in Paris. The latter would, indeed, be the preferable course.

In thinking over this question of centralised stations I asked myself—and I may say that I did this before the recent dream and vision of Sir Aston Webb—I asked myself whether there might not be something to be said for the idea of a pair of termini, one on the north, collecting all the lines that serve the northern, western, and eastern trunk lines; another on the south or Surrey side, gathering together the South Eastern, South Western, Brighton and Chatham lines. These two main stations could be linked together by a series of parallel lines passing under the Thames or, if a really decent bridge could be designed, *over* the Thames; and there would thus be provided through rail connection between north and south. It is rather surprising to discover with what comparatively small alterations of route the various railways could be assembled for this purpose.

But before I heard of Sir Aston's dream—which is, I admit, very attractive—I threw this idea also aside, feeling that, though in a less degree, the evils of concentration—viz., undue size of station and undue congestion of road traffic—applied to this also.

It would be wise, would it not? to ask ourselves whether the distribution and separation of termini is not really in itself a blessing, and secondly, what, if that be the case, is the ideal

position for the termini, London being what it is and the directions of the main trunk routes being what they are.

It is not wise, of course, to take too many data for granted, so we may in passing even go a little farther back and enquire whether, as our railways have grown up piecemeal, they are approximately what they should be as regards number and general position. If we were mapping out a rail-less England for a new and virgin scheme of rail-roads, and were assuming, as I think we should rightly assume, that convergence on the capital is desirable, we should probably devise something of the nature shown on my slide.

This gives us thirteen main lines—a very reasonable confirmation of our present system of twelve termini.

I next offer you an illustration showing how these thirteen lines would most probably impinge upon the capital, and how, if we accept the principle of reasonable separation as a blessing instead of a curse, they would most naturally take their stand in the matter of termini.

You will observe that there are, as at present, many more stations on the north side than on the south; this is due simply to two reasons: one is, that the river bends away from the north in both directions, but the other and far more important reason is, of course, that since for reasons known to history London has settled down in the south-east corner of this island there is much more territory for the railways to cover on the north than on the south.

In this connection I will point out, as I have pointed out before in other connections, that London has suffered too long from the false idea that the regions on the south side of the Thames—I will rather say on the right bank of the Thames—are either non-existent or inaccessible. The theory that to be within striking distance of the metropolis you must be on the left bank is quite a ridiculous one. It dates from the days when London Bridge was either not yet built or was the only bridge. The arrival of Westminster Bridge did, it is true, something to break down the theory, but the other and newer bridges have never quite sufficed to induce belief in the undoubted fact that Southwark is much nearer to the Bank of England than are the National Gallery and the Abbey. Recent events will, I hope, serve to make it clear that the territory on the Surrey side is at least as available for building and for business as many of the sites in Middlesex, but I should still despair were it not that the County Council has fixed Lambeth as the seat and centre of Local Government, and that the owners of the London and South Western Railway have had the courage to rebuild their station (Waterloo) in the rash but steadfast hope that the Surrey side is near enough to the heart of things to serve for all time as the goal and finish of their Londonward journeys. London Bridge Station has never felt sure of its prestige. The stations at Holborn Viaduct, at Charing Cross and at Cannon Street are evidences of that hankering for the northern shore which is based on the ancient tradition that London is in Middlesex only.

Let us look at this thing squarely. If London were a pin point in size, its great radiating railways would quite properly aim at that point. If, on the other hand—to imagine something less impossible—it consisted of two well-confined quarters—a business haunt and a residential region—then each of these lines would reasonably aim at duplicate goals. Evidence of this practice is seen in the rather commendable system under which the South Eastern is represented both by Cannon Street and Charing Cross, the North Western by Euston and Broad Street, and the Great Eastern not merely by Liverpool Street, but also by the use they enjoy for certain trains of access to St. Pancras. This arrangement, I say, is rather commendable, but I purposely modify my commendation.

Setting aside goods traffic, let us think of passengers. Passengers on main lines are of two kinds—viz., those who, having luggage, are obliged to drive to or from the terminus, and those who, having no luggage, are, or may be willing to walk to their destinations on arrival; of the latter class are the vast army of daily travellers who live in the outskirts or suburbs and work in the town.

Now, it is true that a great many workers who are free to choose their suburban homes purposely

select a locality served by a railway whose terminus is reasonably near their place of work, but, on the other hand, there must be a great many who arrive every morning at a station which, though closely adjoining the place of business of some of their fellow-travellers, is at such a distance from their own as to necessitate a further journey on foot or by cab, car, or underground train. Put it this way. The twelve great termini stand, roughly speaking, on the circumference of an irregular oval measuring three miles by two miles, and these six square miles are—also roughly speaking—coextensive with the chief business area. The actual area which is daily flooded by workers from the suburbs is, as a matter of actual fact, very greatly in excess of this size; but, assuming as a basis this area of 3 miles by 2, it is clear that the average distance travelled after reaching the terminus by each arrival must be something like $1\frac{1}{4}$ miles.*

This being so, it would scarcely be a great hardship if, in the interests of general traffic convenience and also in the interests of beauty, the position of some of these termini were to be slightly removed from their unduly central position.

Now I am prepared to contend that, viewing the matter generally, there is everything to be said in favour of a distribution rather than a concentration of the termini.

Before the birth of Euston, Parliament, in sanctioning the first stage of the London to Birmingham Railway, stipulated that it should not come nearer the centre of London than Chalk Farm, and if you will glance at the map of London in 1840, some years later than the establishment of this railway, you will see that Chalk Farm was in those days a comparatively rural spot.

Times changed, and the station of terminus became Euston. When St. Pancras, King's Cross, and Paddington followed they were all by common consent placed on the north side of the then New Road. I have written elsewhere on the New Road, that fine enterprise of our grandfathers, which was as bold a foretaste of our modern town-planning as one can well conceive. That men of that age should have appreciated the desirability of forming a circuit road from Paddington to the north of the city, along land which was then available, because not yet absorbed into the building area of the metropolis, was at least a remarkable fact in the history of municipal foresight. And the additional idea of making this road the southward boundary of the main railways of the north and west was another fine stroke of orderly town government.

In course of time railways crossed the Thames. There are now four such bridge crossings. One, the least objectionable, is that which conveys the two main lines from Victoria Station. Another is the monster which issues from the jaws of Charing Cross. A third is the disfigurement adjoining Blackfriars Bridge, and the fourth is that which feeds Cannon Street. For these three last I contend with fervour that there is no need. I go farther and predict with equal fervour, and some measure of hope, that in due time they will confer on the beauty of the Thames the homage of graceful disappearance.

I am anxious to maintain that there is no good reason why the termini of the S.E. and L.C.D.R. should approach much nearer to the centre of London than do the termini on the north of the G. W., G. C., L. & N. W., G. N., and Midland. If one takes, as one reasonably may, a line running from the Bank to High Street, Kensington, as representing the centre line of the commercial and residential parts of London, it will be found that the nearest of the northern stations is $\frac{3}{4}$ mile from it and the farthest $1\frac{1}{4}$. The line is, I think, a fair line, for its course passes through the Ritz Hotel. On the south of it Victoria and Waterloo are distant $\frac{3}{4}$ and $\frac{1}{2}$ mile respectively, and London Bridge is at about the same distance, while Charing Cross and Cannon Street are within a furlong, and Holborn Viaduct has overstepped it northward to the extent of half a mile.

Why, I ask, should the three latter stations add to the confusion of London's traffic congestion

* The Traffic Commission reckoned that the journey made by each passenger on foot or in cab or omnibus averaged three-quarters of a mile, but this did not include the supplemental journey by the Metropolitan or District Railway which many performed after leaving the terminus.

by planting themselves so impudently in the heart of our civilisation. It will be answered, of course, that the south side of the Thames doesn't count as recognisable territory, and that to be deposited there—even if one be nearer St. Paul's or Piccadilly Circus than a traveller arriving at St. Pancras—is not to be reckoned as arrival in London. To this I answer that the lands north of King's Cross and Euston are at least as much like deserts as are the surroundings of the Elephant and Castle, and that the Surrey side—though possibly it has only just been discovered by that Columbus who, greatly daring, planted there the foundation stones of the County Council's Hall—nevertheless, is now no longer a terra ignota, and there is no substantial reason why it should not in the very early future be found capable of bringing forth and nurturing other buildings of architectural value and of metropolitan importance. Recent hopes and aspirations point to the probability of a noble avenue, or an equally noble quay, along the south shore of the Thames. My personal cravings are in the direction of the latter, for I think that we lose much of the poetry of London by failing to acknowledge and to ennoble her riverside trade. But south of this quay should be a fine road from Westminster Bridge to Southwark Bridge—or, if you prefer, from Lambeth Bridge to London Bridge—and beside that road should stand a new station intended to take the place of Charing Cross, and the stations at Cannon Street and Holborn Viaduct. Some of my friends favour, I know, the idea of placing this new station alongside of Waterloo and approaching both by a high level bridge spanning the Thames at the spot where Charing Cross railway bridge at present stands. For my own part, I prefer the place midway between Waterloo and London Bridge at which the South Eastern and Chatham lines are met by the line which runs north to Holborn Viaduct. The access from such a new station to the City and the West End would be exceptionally good, it would only be half a mile south of my line of axis, and it would act up to the principle, which I honestly believe to be the right one, viz., that the termini should be not in the centre, where they create overcrowding; not close to one another, where they disturb each other's streams of traffic; but standing more or less in a ring round the centre and fairly equally distributed.

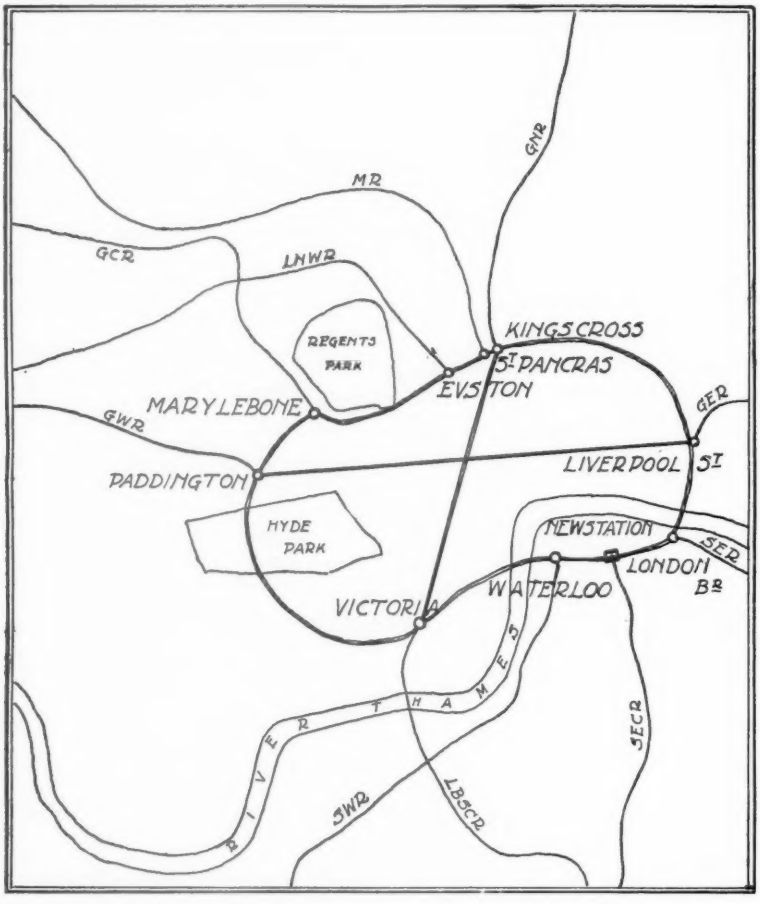
And here let me not conceal from myself, or from you, that, had I no such arguments to offer for keeping the South Eastern Railway on the south-eastern side, I would still plead with might and main for any readjustment of our railway system which would rid the Thames of those three blemishes: the iron bridges at Cannon Street, Blackfriars, and Charing Cross. Were the riddance Utopian it would be worth praying for, were it Quixotic it would be worth paying for, but if it is good business let us have it at once, and prove that the useful and the beautiful are indeed one.

If you will refer once more to my imaginary plan of the thirteen imaginary termini of thirteen imaginary lines you will see that to a very large degree the positions of the phantom stations coincide with those of some of the present ones.

My Scotch line and Newcastle line arrive at Euston and St. Pancras. The Cambridge and Norwich lines terminate, it is true, right and left of the Angel—a very good place for them—(instead of at Liverpool Street), but the Southend line runs into Fenchurch Street, the Dover line ends at London Bridge Station, and the Brighton line at or near Victoria. The termini for Bristol, South Wales, and Cornwall, &c., are by my $3\frac{1}{2}$ mile circle brought rather nearer to the centre of Mayfair than our present feelings would allow, but that rather proves than disproves my point. If we refuse to put a station near the Marble Arch and another near Hyde Park Corner, on the ground that they are too intrusive, then why in the name of civilisation do we allow them in the Strand and on the precious ground between the Thames and Cornhill? In fact, I have proved that if you turn a circle of a radius of $1\frac{3}{4}$ miles with Charing Cross as its centre no railway station or terminus need impinge on its circumference.

As a matter of fact, of course, the heart of London is defined not so much by a circle as by a sort of oval, and the laying down on the London map of this figure will make my points clearer. [This oval outline corresponds very nearly with the course of the imaginary circuit railway shown in

the diagram below.] My oval, you will see, actually touches with its circumferential line eigh of the twelve termini at present existing. Two others, Liverpool Street and Fenchurch Street, ar almost on it (being just outside), and the only remarkable transgressions are the invasions of thi sacred enclosure by Charing Cross, Cannon Street, and, if we may reckon it among the termini. Holbor Viaduct. I therefore consider that, with these exceptions, the positions of our termini are reasonably near the ideal arrangement.



It remains to say a few words about the connection between the termini. Ideally, there should be a railway system uniting the whole of these stations. The old Metropolitan and District railways made a good start by linking together King's Cross, Paddington, Victoria, Charing Cross, and Liverpool Street.

It is true that their grip on the termini was somewhat faltering. At Liverpool Street, Victoria, and even at King's Cross, the transit from the main line train to the underground train is longer and less easy than it might be. Still, the principle aimed at was good, and the main idea, a circular railway, was excellent. Since the days of this early effort the underground communications have, as we know, been more than doubled in mileage, but unhappily that increase has been effected with an extraordinary lack of system. The Central London Railway,

wisely appreciating the fact that a circular route needs to be supplemented by a diametrical one, made a dash across the major axis of the ellipse. But with what strange lapses of fulfilment! Why was there no joint station at Notting Hill? And why was the connection at Liverpool Street left out for years, only to be recently accomplished as a kind of afterthought? Again, how easily might Paddington have been reached? But Paddington was left to be picked up as part of another system which practically duplicates the line of the old Metropolitan from Portland Road to Paddington. This is sheer waste of prime cost.

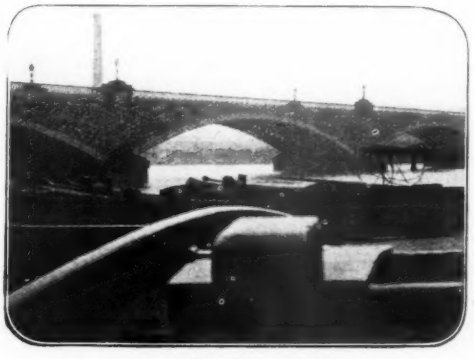
Three routes tunnel under the Thames. The old Waterloo to City Railway—a singularly cheerless catacomb, which delivers at no intermediate station—the City and South London, and the Baker Street and Waterloo. Had these Thames crossings been arranged with any eye to general utility they might most easily have been better placed. In fact, it may be said at once that if it had been the business of any one person of intelligence to make sure that these piecemeal contributions to the railway system of London were sanctioned or vetoed in relation to some general scheme, there can be no doubt that the public would have been much better served, and the railways themselves would have been more remunerative.

Just think what simplicity would have done for London.

Form a railway uniting the whole of the great termini (except Charing Cross and Cannon Street) in an irregular oval route, and then form two diagonal routes connecting Paddington with Liverpool Street, and Victoria with King's Cross. The intersection, you will find, is exactly at the site of Tottenham Court Road Station. From the periphery of this irregular figure you can cast out as many branches as you please into the suburbs, and, as a matter of fact, you can easily connect to it the existing suburban lines of the present systems. The really remarkable feature of the plan is, however, that, treating of the area within the ellipse, you will find that you can replace upon it nearly all the existing stations, and yet you have saved four or five miles of rails and have made it possible to get from anywhere to anywhere with only one change.

Compare this, for example, with the present difficulty of getting from Chancery Lane Station to Victoria.

Is it not clear that, in the matter of internal rail communication, no less than in other matters, London has suffered to an incredible degree the inconvenience, expense, and disfigurement which the simplest of central control, the most elementary of preconceived design would have converted into convenience, economy, and decency.



West London Railway Bridge

DISCUSSION ON MR. WATERHOUSE'S PAPER.

Mr. Ernest Newton, A.R.A., *Vice-President*, in the Chair.

Mr. H. V. LANCHESTER [*F.*]: I have much pleasure in enlisting your suffrages with me in this vote of thanks. I think we all feel that Mr. Waterhouse has given us a great deal with which to fill our minds, not necessarily in what he has said, but in what is in his mind behind what he said. I should like to ask him his views on a few things, for I do not think we could do better than study some of the points which he has not had time to develop when trying to compress into an hour what was legitimately material for a very much larger handling. The first thing that struck me when Mr. Waterhouse was speaking of those great roofs like the one he admires—an admiration which I share with him—is that from the inside the St. Pancras roof is a magnificent one. But a city is a city as a whole, and it seems to me that these great roofs, with their simple, long mass, rather unscale the rest of our City when we see them standing up among the more intimate and more delicate architectural designs. Take Cannon Street Station, for instance. Cannon Street, I think, is the one effort in which an attempt is made to balance the roof from end to end by those two towers to which Mr. Waterhouse referred in not too complimentary terms, though he did not intend to be unkind. He says he is hopeful of Waterloo, but I confess I always think it a pity that something different was not done with Waterloo. True, the station buildings are horizontal, and that counts for something in architecture nowadays. But the intricacy of its approaches, whether one is afoot or in a taxi, is architecturally bewildering. Surely on the Continent railway approaches to a high level are managed better than that? Certainly, as regards the approaches to Waterloo, there is oblivion of the architectural idea. I have read—in the *Railway Gazette*, I think—that the eminent engineer of the South Western Railway and some of the Directors visited several of the most important railway stations in the world, and that they intended to embody the merits of them all in Waterloo. From a practical point of view they may have done it, but æsthetically they have not; perhaps they left the æsthetic factors out of account. With regard to the length of Victoria, would it not have been possible to put a double-decked station there, and to have had the electrical station underneath so as to save some of those long runs? Again, while fully accepting Mr. Waterhouse's dictum that a big central station would be an impossible solution of our railway difficulties, would it not be a more economic method in principle to make all our big City stations through-stations, and not terminal stations? In the matter of shunting and crossing in and out traffic there must be a great deal of waste in the terminal station. If pairs of stations could be linked up to enable this work to be done, and for trains to be shunted and re-directed outside London instead of inside the most valuable part of the City, as is done in many of our big provincial towns, I am inclined to think that it would be an economically advantageous thing. Lastly, there is one point on which I was extremely interested in Mr. Waterhouse's remarks—viz., the advantage which a general scheme would have been in laying out our new electrical underground railways. These railways, I suppose, are pretty well complete, so that a general scheme is now too late, but we have immediately coming upon us the necessity for a general scheme in our street improvements for ordinary open-air traffic. In this matter we shall waste money and involve ourselves in all sorts of muddles and extravagances if we do not have a general scheme. I am glad to see that it is everywhere recognised that a general scheme is absolutely needed. The Local Government Board, we know by the conferences that have been held, is in favour of a general scheme for London and its surroundings, and I hope it will include street improvements in the centre portion in regard to what will be needed in the future. If we do not have a general scheme, we shall have to go through the same trouble and the same disturbances as we have experienced in our Tube and other underground railways.

Mr. FRANK POTTER (Manager of the Great Western Railway): As a visitor, and as hailing from the third of the trio of London termini which Mr. Waterhouse singled out for honourable mention, I should like to express my sincere appreciation of your courtesy in inviting me to be present here this evening to listen to the very able Paper which has been read. We have all been charmed and entertained by the manner in which Mr. Waterhouse has dealt with the subject, and, if it does nothing else, it will give us all furiously to think, because if only railway men could have their time over again, and could have the opportunity of re-arranging the approaches to our great Metropolis, they would certainly not arrange them as they exist to-day. However, great credit is due in certain quarters for the foresight which was displayed in connection with some of our London termini. It has always been a matter of surprise to me that Mr. Brunel and Sir Matthew Wyatt,

with whom he was associated, were able to look so far forward into the future as they did in designing a station which, whatever its claims may be to architectural beauty, has nevertheless, for nearly sixty years, answered the requirements of an extending traffic, and it is only in the last few months that we have had to bring into use a line which was outside the limits of the original design. That, I think, reflects the greatest credit on the foresight of the architects who designed Paddington Station. With regard to other features in Mr. Waterhouse's Paper, I was very pleased to hear his references to the suggestion that no advantages are calculated to accrue from a highly-centralised depôt. I gathered from his later remarks that he had been furnished with particulars of a scheme relating to goods traffic; and if he had been able to deal with that particular scheme he would, from a professional point of view, have had a great deal that was most interesting to say upon it. From my own point of view, I consider what Mr. Waterhouse did say with regard to the inevitable congestion arising from a central passenger station as applying in even greater degree to a goods station. So far from relieving the congestion in our roads, it would do much to accentuate it. Reference has been made by Mr. Lanchester to certain ideas suggested by the Paper as to the routes taken by the railways, and the fact that our termini are termini and do not afford facilities for through runs. We feel that if we had not to do so much back-shunting at our big stations we should be able to attain a higher standard of punctuality and handle our traffic more satisfactorily than is the case to-day. But anything in the nature of a forward run from Paddington would, I am afraid, seriously interfere with the amenities of Hyde Park and Kensington Gardens, and other valuable residential quarters. I am very glad to know that Paddington Station can be spoken of in such terms as those applied to it to-night: I shall now regard it with even more admiration than I have in the past. It recalls to me the story of an old employé who was found standing on the bridge which connects Paddington with Bishop's Road, and who being accosted with the remark, "So you can't leave the old place, can you?" answered, "No, I feel I must come once more to admire those truly beautiful spans." I mention it because it supports what Mr. Waterhouse said in including Paddington in the three stations which may be honourably mentioned in connection with architectural features in London. I have the greatest pleasure in seconding the vote of thanks for this most excellent Paper.

Mr. H. HEATHCOTE STATHAM [*F.*]: I would like to say a few words in support of the vote of thanks. It is a Paper on a subject in which I am very much interested; and Mr. Waterhouse has made it very interesting, as he always does. I agree with Mr. Waterhouse that we should try to make a railway station architecturally impressive to the incoming foreigner. What he said about the Euston portico was expressed in almost the exact words I should have used if he had not. I have always had the greatest respect for the London and Birmingham Railway for putting up that portico, for showing the feeling they had that they were going to do a great thing, and that it deserved a fine gateway. It is a piece of imitation Doric and not exactly what we would put up now, but it is grand and bold in scale, and shows they appreciated the idea of making the entrance to their railway architecturally effective. I have always considered it a mistake, architecturally, to front a railway terminus with a hotel. It may be convenient, but a hotel is a thing which, in its main character, always has to be much the same; you cannot get much character out of it. To my mind, the entrance to a great railway station should give you the impression of a great portico to a great road. I think a railway terminus is, in its associations and suggestions, a most poetic thing. You see there the starting of great roads which have to go over the whole country, conveying thousands of people every day on all kinds of errands, and it is a thing, therefore, which is worth treating in a symbolic architectural manner. I remember that at the St. Lazare Station, in Paris, it was intended to front it with an hotel, but the Service des Beaux-Arts said no, it should be a separate affair, and the station should have its own façade. Mr. Lanchester has referred to the room taken up by shunting, and that it would be better if this could be carried out in the country. Everybody who has travelled westward from Dublin will remember how it is done there. You are run out into the country two miles, and you are then shunted back. But the engineer to the new Victoria Station pointed out to me an ingenious plan which he had adopted to save time in getting the trains in and back again. He has got a middle line of rails between the two platform rails, and when a train is emptied he can shift it to the middle line of rails, and that does away with the time lost in shunting trains back. There is another point about which I feel most strongly—viz., the way in which railway stations are utterly disfigured by advertisements. When Victoria Station had just been finished, I was invited with a few other friends to luncheon, and we looked admiringly at all that fine expanse of clean brick walling. The engineer, who was present, said: "Ah, what a pity to think they are going to spoil it. I did all I could to persuade them to have no advertisements, but they said it is a matter of business, and they must do it." But there is another side to the matter, and if you are going to keep your stations attractive it is worth while considering whether they should be the exhibiting places for all sorts of miscellaneous advertisements. You will never get your stations to look well if that is done; and I would ask the authorities to consider whether they would not gain some credit by doing away with these advertisements. It would, in some way, compensate them for the loss of money. With regard to the underground railways, Mr. Water-

house mentioned that they were not laid out with any regard to connection with each other. I am always amused and pleased with the accidental way in which you are led from the underground rail to the lift which is to take you up. The railway companies evidently thought it was good for us to have some exercise after sitting in carriages underground, and so they provided a series of lanes and turnings, so that, if the station is a new one to you, you never know which way you must turn, or how far you will have to walk. It is a little excitement, and it is better for one to have this walk to do.

Mr. G. A. T. MIDDLETON [*A.*]: I should like to add my thanks for this admirable Paper. In spite of the humour of its early part, and my great enjoyment of it, I was most interested in the second part, and particularly in the schemes Mr. Waterhouse suggested for circular routes round London connecting the railways and roads. In all these he has taken it for granted that Charing Cross and Cannon Street Stations are wrongly placed on the north side. That idea I had myself some years ago, and Mr. Waterhouse's suggestion for a South-Eastern station, a central one, on the south side of London, occurred to me, and that it should be in the same position as he has placed it. I am not sure that it is impracticable, even as things stand now; could not the loop line running from Charing Cross to Cannon Street be converted into a fine high-level roadway, connecting those two points, and enabling a South London station to be made? That same roadway would link up Waterloo Station and London Bridge Station *en route*. This seems a possible way of doing a great deal for the South London termini, making them well available from all other parts of London. I had developed it at one time to a greater extent than that, with a further idea of using the other loop to Holborn as another roadway. But this is hardly the occasion to develop the idea fully.

Mr. EDWARD WARREN, F.S.A. [*F.*]: I am not behind any of the other gentlemen who have spoken, in my extreme admiration of the Paper which Mr. Waterhouse has given us. Like all that gentleman's lectures, it is fraught with the charm and wit which have made of a subject that might have been overscientific and even dry, one which is quite entrancing both in the manner of the Paper and the interest of its illustrations. One thing, amongst many others, which strikes me, in relation to the possibilities of great terminal stations in London, or in any other large city, is that it is useless to expect to have a fine entrance façade to a station unless you provide it with a fine approach. Almost every continental city of any size has a dignified and spacious court of approach to its railway stations. The smallest and meanest French stations have always an ample "place" or square of approach. At many of them, if you miss a train, you can wait for the next under the trees or by the fountain of a garden set in such a "place." It is the same thing in Italy. In London, where space is of such enormous value, we can only hope to get fine approaches to fine railway stations if the site for such approaches is provided by the Municipality, or the State, or both. You cannot expect railway companies to acquire and demolish costly property in order to provide that stately approach to their terminal stations, without which our entrances and exits to and from the metropolis can never be divested of the ignominious scuffle we at present experience I consider that the really fine station of St. Pancras is marred by the narrow uphill vermiculous approach to the mean court in front and the cramped court at the side, with all their dangers of collision. Is it not almost inconceivable that a civilised people, having built such a station, should be willing to put up with so miserable an approach, with such paltry means of ingress and egress? In this question it is necessary then to consider, not merely the resources and interests of the railway companies, but to cultivate a care for fine disposition, in regard to our railway termini, on the part of municipal authorities. And this works back, through the municipalities, to ourselves who are, as citizens, after all, responsible for the municipality, and therefore a greater interest and keener pride in its railway stations must be fostered in the minds of citizens.

Mr. C. L. MORGAN, Chief Engineer of the L.B. & S.C.R.: I wish to thank the Council for the privilege of being present this evening to hear Mr. Waterhouse's most interesting Paper. The question of terminal stations is one that has closely concerned my professional career. In my early pupilage days, in the very early 'seventies, I was on the metropolitan extensions of the Great Eastern Railway, including the construction of the first Liverpool Street Station; and I had the privilege in the early 'nineties of being engaged on the enlargement of that station, of which the author said it was so difficult to find your way in when you get on the footbridge. I was also fortunate in being the engineer for the enlargement of Victoria Station, so you will agree I have had some experience in regard to terminal stations. But I feel a little bit out of my element to-night, being in the midst of an artistic gathering, where the question of art necessarily, and I think rightly, takes the first consideration. But as an engineer I have to approach this question principally from a commercial point of view. I am sorry that is so, for I have some sentiment in my nature; still, the aspect of pounds, shillings, and pence has to be considered also, and the utility of the stations. Consequently, in laying out terminal stations you cannot give vent to your flights of fancy from an artistic point of view; that is, you cannot make that view pre-eminent. You have in most cases, and particularly so in London, to consider your confined conditions; if you take one square foot to the right or to the left, you have to consider how many thousands of pounds it will cost you. You are hampered in all

directions—and I say it advisedly—by the requirements of Local Authorities and the fatherly protection of the London County Council; and when you get also Borough Councils and the London Traffic Board, and the Police, who have to regulate the traffic, you feel very hampered. When you have dealt with four separate authorities and got your plans out in regard to one particular road, and have satisfied these authorities, the amount of individuality left is, I assure you, very small. I say advisedly you cannot do what you wish to do when you are designing a station or any public work of that kind; it is a very difficult problem to satisfy so many outside interests whilst protecting those of your company. I am most interested in the second part of the Paper. If I may say so, the Paper is one which is full of thought and exceedingly able, and gives much for consideration, even to those who have made a study of the subject. If we could, as they say on the Stock Exchange, "job backwards," what a different condition of things we should have! We know what our present requirements are. Had we known what our present-day conditions would have been even twenty years ago, what a difference there would have been in many of our works! But we must take the birds as they rise, and deal with these matters as we find them. To come back to Victoria Station: I admit at once that it is not an ideal station. I had Buckingham Palace Road on one side and the Chatham and Dover Railway on the other. If we had built the station out further towards the Chatham side and occupied their site, there would have been all the expenditure of buying property, interference with roadways and reinstating the Chatham Company; and if we had touched Buckingham Palace Road and the valuable property on the other side of the road, it would have been such a big thing that it would not have been a commercial quantity to widen the station. The thing remaining was to get in length what could not be got in width. There again, if I were laying out the station and had a free hand, and not trammelled by such conditions as indicated, I would have no platform longer than what is required for the longest train; I would have no platform long enough to take two trains. There are many old stations at present which have platforms long enough to take two trains—one, I think, takes three, the Cambridge Station on the Great Eastern Railway—and I think I have profited by seeing what occurs at those stations. I profited by that in three lines between the platforms in the outer half of the station, and the inner end with only two lines, so the position is that the first train in, if the traffic requirements necessitated it, can be the first train to leave the station, and not, as is the case with other double-ended platforms, that the first train in must be the last train out. The first train coming in you can pass out by the middle road between the platforms in the outer end of the station, and then bring the train which has discharged in the outer end of the station to the position vacated by the first train, and so arrange matters that passengers do not need to have a light railway to take them down to their proper platform. That is a criticism—viz., that the trains are too long—which has been made against Victoria Station. I admit they are long, and it is a blot, but we have got over that, I think, in the most practical and best manner possible. From the practical aspect, I believe it is one of the easiest working stations in London at the present time. There is this advantage: if we have a very long train, we can open that train out, and by means of the third road at the outer end, drop in the middle of it a horse-box or whatever vehicle we want; Mr. Potter, the General Manager of the G.W.R., who is sitting near me, will know what an enormous advantage that is. If we have a slip portion, we can put a horse-box on to that particular portion by opening the train out on the long platform. Mr. Waterhouse referred to St. Pancras roof; it is certainly a very fine roof; but, though I do not like prophesying, I think it is the only roof of the kind you will see in this country. The expense of maintaining such a roof, especially in our London atmosphere, and particularly owing to the deterioration arising from steam traction—it may be better when we all use electricity—is out of proportion to any benefits you may get from appearance or architectural effect. The experience of engineers is that you must have a roof of such dimensions and such form that you can easily maintain, repair, and renew it; one that you can get about on and paint, and can properly inspect, without great cost in scaffolding. You must also have regard to the grave risks there are in a roof of such spans of overlooking faults however closely inspected. I think it behoves everybody to have something that is practical, irrespective of appearance from an architectural point of view. The question of advertisements has been mentioned. I think I am a little fortunate in my General Manager, Mr. Forbes; I am really here as deputy for him, because it is a subject in which we take a great interest. I have an advantage in having him as General Manager because he has artistic instincts; probably many of you know that his brother is a celebrated artist, and Mr. Forbes the General Manager has got some of that sentiment in him. The first thing is, that you get a proposition for some very magnificent advertisements. It comes to the engineer, who is asked, Can that advertisement be fixed in a particular position? Is there any objection from a structural point of view? I say, "I hope you will not fix it in that position; we have been trying to save that one feature of this station." If you have such a General Manager as I have got he says, "We will leave that to be the last thing which comes." But, as sure as I am standing here, it does come. They say, "It is worth £150 a year; these are hard times, and there are all those shareholders who are wanting a dividend." So we have to give way, and up goes the big advertisements,

and the beauty of the station is spoiled. One of the speakers said he thought we might have an underground station or an upper-level station at Victoria. That was the problem thoroughly considered long before we started on the reconstruction of Victoria Station, and it was well thought out. Those who know Victoria and the gradients will follow me. There are three roads passing over the railway, and the line is on a gradient of 1 in 59 from the last bridge (Ebury Street) to the river. You cannot come from the high level over the river and keep over the bridge referred to, unless you finish at Victoria Station at something like 35 feet above the present rail level. It would be an impossibility, having regard to all the surroundings there, to get an approach for vehicular traffic to that station. If you take a low level it puts you back as far as Clapham Junction to get under the river, and then you would come in at the same level as the Metropolitan and District. But that is rather a gigantic thing to think about. I do think it is within the range of practical politics but that something of that sort may come. With regard to Waterloo Station, I am not here to make apologies for the engineer of that station, but it has been somewhat severely criticised. From the engineering point of view, I say it advisedly, I should be exceedingly proud if I were the engineer of that station. When it is finished, I believe it will be found to be from the railway practical working point of view an ideal station. I admit you will have to go those circuitous routes which have been mentioned, all round with the cabby; but I do not think he will mind; he knows his way round under the arches, and it will add an extra sixpence to his register. It is an excellent station, whereas before it was an abomination.

Mr. WATERHOUSE, in reply, said: It is a surprise to me that my Paper should have been received with so much kindness, and particularly that I should have been let off so tenderly by our railway friends. I feel especially grateful to Mr. Morgan for the practical things he said to wind up this debate. He said how well it would be if we could work these things retrospectively, and I agree with him; but we should not lose hope. What I endeavoured to point out in the early part of the Paper was that, in order to make provision for unknown needs, the early pioneers played up to the period fifty years ahead of their day; they were prophetic to an extraordinary degree; and the spirit of prophecy need not be considered to be dead even among engineers of the present day. Touching one or two points which have been raised: Mr. Lanchester pointed out that a roof like St. Pancras Station roof is out of scale with other things. In regard to that I would merely say that architects have to deal with big things; that a station is a big thing, and it must be taken as such. The difficulty of the large scale must be got over by us as the Romans would have got over it. Did I speak too warmly of Waterloo? Mr. Lanchester suggests that I did. I selected a few bright spots, and dwelt upon them, and I still have hope in the case of Waterloo—hope that my hopes will be fulfilled. As to the through-station scheme, I am unwilling to recognise the desirability of it. I cling to my privileges as an inhabitant of this Metropolitan City; one such privilege is that our trains actually start from here, and do not run through. I thank Mr. Potter also for his kind words and practical railway details. With regard to his remarks about a central goods station, I agree that centrality must be bad in that case, as in the case of passengers, but I understand from those who are interested in the clearing-house scheme that the goods would be dealt with by mechanical sorting, which is not applicable, I presume, to passengers; at any rate, I do not propose to submit myself to mechanical sorting! Mr. Middleton has alluded to his well-known scheme for using high-level railways as roads. I had not forgotten that, but having many things to speak of I did not allude to it. I considerably condensed the latter part of my Paper in the reading, having found I had overwritten myself. Therefore, if anybody is interested in what I had to say, and will pay me the compliment of reading the Paper at home, I shall be very grateful. I am particularly interested in what Mr. Warren said about the Municipal side of the question of station approaches. It is very easy for us to be hard on the railway companies, to upbraid them for what we consider to be the ugliness of their work, which uglinesses are often economies in our own direct interests. We are apt to forget that in this country we are not living under a despotism, and that the Local Authorities are not our lords and masters, but our delegates. We should look to State and Municipal aid for the architectural beautifying of stations and their surroundings. I thank you very much for the way in which you have received my feeble attempt to deal with this enormous subject.

THE CHURCH OF ST. MARY, KING'S WALDEN, HERTS.

By Walter Millard [*A.*]*

King's Walden Church, Herts.

FOR the latest published data concerning the historical development of this building we turn to the Inventory of the Historical Monuments in Hertfordshire, issued by the Royal Commission on Historical Monuments in England, and to the recently published Vol. III. of the Victoria History of the County of Herts, comprising the churches in the Hundred of Hitchin, in which this parish is included. By the light gained from these authorities we may proceed at once to read from the fabric itself something of the life-story of this edifice and to follow out approximately the course of development in the structure, from its earlier to later forms, arriving finally at the completed shape before us. This story is one of growth in the building, of a regular series of structural changes and expansions succeeding one another through century after century, a story which we may find paralleled more or less closely in most of our old churches. To an archæological society I need not emphasise a primary fact so obvious as this long-continued course of growth in the fabric; but it may prove interesting to note the course of events in the life of the building from first to last, to observe the ordered sequence of the several parts of the whole work, as by turn they came into place.

For a diagram to illustrate this I have measured-up and drawn-out to scale a ground plan of the building, indicating on it by various hatching the portions of walling apparently assignable to the different centuries during which building-work has gone on here. In the case of a structure such as this we must dismember and dissect it mentally, if we are to understand it; and a diagram may assist us in the operation.

The essential data given by the above-named authorities, as to the building-times of the several main portions of the edifice, may be summed up as follows: An aisleless church perhaps of the late eleventh or early twelfth century, now represented by the existing nave, had the arcades we view inserted in its side walls, with aisles built out beyond, about 1190. The existing chancel seems, in plan at least, to be of the thirteenth century, so it must replace an earlier one. About 1380 the west tower was built, and in the next century—the fifteenth—the clearstory was raised on the nave walls, involving a new roof undoubtedly, and the aisles were re-roofed much as

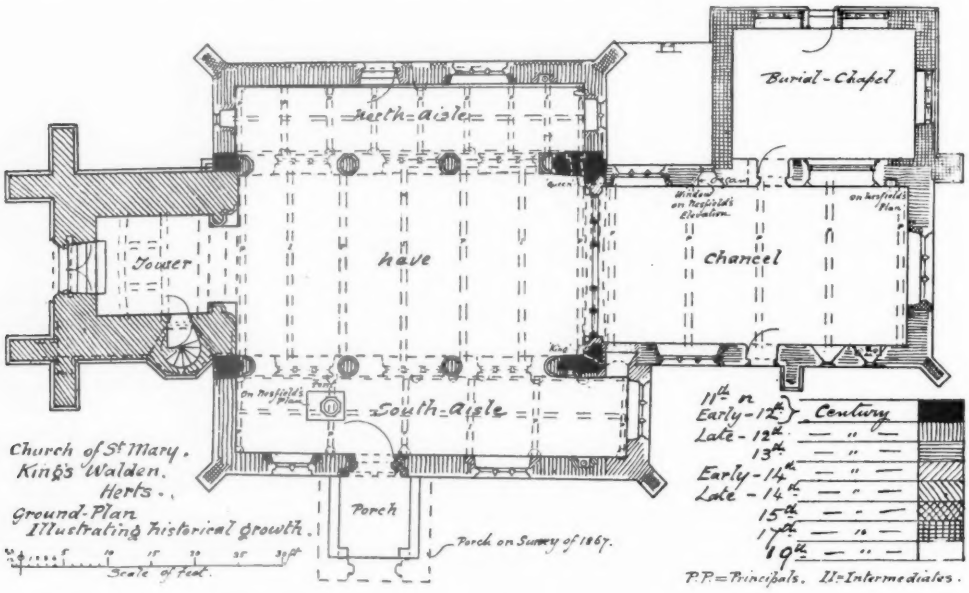
* Paper read at the Church before the East Herts Archæological Society, 28th August 1913.

we see, on raised and largely rebuilt walls. In the seventeenth century the present vestry was erected, as a burial-chapel, on the north side of the chancel, whilst in the nineteenth century came the existing south porch, completing the plan as we have it to-day.

The significance of these bare particulars and the interest attaching to them become more evident as we trace out the work further in detail.

To take the nave arcades first; we must remember that the men who built these built them to fit the already standing nave of a church in daily use, a building that the parishioners could not dispense with even temporarily, there being no substitute for it. We may be pretty sure that, even to obtain a much-needed enlargement of their aisleless nave, they would not, if they could help it, proceed straightway to unroof this the purpose, combining as it does strength for taking weight with greater convenience for the under-building of standing walling than would be given by a lower curve.

Evidence of these arcades being insertions in already existing walls is afforded by the respond-piers, especially those at the eastern end, and by the arches themselves. Clearly the wrought stonework of the half-columns, with their caps and bases, has been applied to the piers, not fitting them as it would if the work were all of one build, and thereby showing these piers to consist of pre-existing walling; whilst the outer ring, or order, of each arch-mould may be observed to vary here and there in its overhang beyond the inner or sub-order—that is, to deviate from a straight course on plan—according as it has had to be



and to pull down its side walls, stopping all use of the place for ever so long. Nor need they do so. They might keep it all standing, and in full use, whilst building-out aisles complete on either side; and then they could go on gradually to throw these aisles open to the nave by constructing arcades in the side walling piecemeal. Here ingenuity would come into play; but, one by one, the four columns, the four responds at the ends, and the six arches could be built up, in position, each in a special gap cut for it through the standing walling, as required for the new masonry to be bedded stone by stone. Thus, disturbing work might be reduced to a minimum by confining it to one point only at a time, where it could be screened off, the old material being removed by degrees. The arches are rather sharply pointed, a good form to adopt for accommodated to take the older walling above it, whose face has not preserved a true plane, but winds somewhat, after the manner of old wall-faces. The two western responds lean outwards to the west, owing to an insufficient length of old walling in each instance having been left standing, in the form of a pier, to abut the thrust of the arcade at this end: the eastern responds having deeper piers left behind them, for the purpose perhaps of flanking the new aisle altars, remain upright. Indications of the western ends of these early side walls seem to be discernible externally on either side of the tower: and on the north side there remain, possibly still in position, some eight or nine courses of thin bricks, varying from about $1\frac{1}{4}$ inch to $1\frac{1}{2}$ inch in thickness (with $\frac{1}{2}$-inch to $\frac{3}{4}$-inch joints of tough mortar), which look not altogether

unlike Roman material re-used, and raise the suggestion that the aisleless nave might have had its angle-quoins so fashioned. Assuming the height of its side walls to be given approximately by the window-sill beds of the existing clearstory, at which level the internal wall-faces indicate a slight thinning of the walls, we may imagine roof-slopes of suitable pitch rising to an apex about as high as the existing ridge; and if, then, these slopes were just produced on downwards, when the aisles came to be added to the central body, the whole would appear as covered in by a single roof, like a barn, with low side walls to the aisles.

To complete the picture of this edifice towards the close of the twelfth century, when it had developed side-aisles, we have to add to it a chancel at the eastern end, remembering that, in fact, it must have had such a feature all along. As to the design of any earlier chancel than the existing one, there seems to be little clue; we can only feel certain that it was small in comparison with the existing structure, which appears to have come into existence within the first half of the thirteenth century, and must have been undertaken as a work of enlargement. Conceivably, it might have been built up beyond the side walls, as well as out beyond the east end, of the earlier chancel; at any rate, by eastward extension they could obtain a roofed-in sanctuary, to receive their altar, before the earlier east end need be pulled down, again minimising as far as possible interruption of services. Still, the earlier chancel arch would seem to have survived for a further fifty years or so, since the existing arch, judging from its moulded details, could hardly have taken shape till about the opening of the fourteenth century. It must have been the last stroke to the work of chancel enlargement. Replacing an arch of perhaps half its span, as an earlier arch might have been, this one was built as wide as could well be got into place. Its height would be governed by the chancel roof, the pitch of which is probably retained in the existing covering. Here, also, as in the case of the nave-arcade arches of some century earlier, the outer arch-rings, or orders, vary in their overhang beyond the sub-order, to fit up to pre-existing wall-faces above; which fact goes to show that, without a pulling down of the whole gable, this arch with its jambs must have been built-up, in the thickness of the standing walling, outside and over its predecessor, before this latter came to be cleared away. A good instance of such practice is to be seen in the tower arch of St. Mary's, Hitchin, a thirteenth-century example.

Along with this chancel arch here seems to go the rather singular passage-way through the walling, from the north-east corner of the south aisle to the south-west corner of the chancel. It looks as though this aisle had been lengthened eastward for the express purpose of gaining the way of communication; and the masonry of the arched opening from the aisle, with plain pointed head and chamfered edge, appears to agree with that of the chancel arch. Whether the original end-wall of this aisle was actually removed out of the line of abutment to the chancel arch or not, it is a fact that a settlement has existed through the walling at this south-east angle of the nave, sufficiently serious to be prominently noted on the survey made in 1867, the effect apparently of the weak abutment on this side to the widened chancel arch.

Before the close of the fourteenth century the parish was able to pride itself on the possession of a real bell-tower, of size, in which to hang their peal, after having had to put up till then, most likely, with some sort of turret; such, for instance, as representations and descriptions show that the next parish, of Lilley, continued to make-do with down to within living memory. This King's Walden tower is distinguished by that indefinable yet unmistakable air of quiet stateliness peculiar to the English country church, a quality which can be felt, even through a mantle of ivy such as here prevails. The tower has had its side walls set out a little askew from its east wall, which, with its great arch, evidently takes the line of the old west wall of the early nave. The erection of this tower in itself must have tended to diminish light in the church, owing to its obliterating any former west window, for which the new window, some 18 feet further back from the nave, had to serve as compensation; and since the side walls of the aisles would still be remaining low, it seems probable that the gloom deepened. Aisle window-openings may have been enlarged to meet this; but no wonder that the next move made in the way of expansion of the fabric was to throw up a clearstory on the nave walls, as many another church was doing during the fifteenth century. This, of course, involved a new roof of low pitch, a leaded roof, with oak principals, whose two easternmost stone corbels, carved as King and Queen, yet remain in position. And the aisles, too, followed suit, with new roofs of low pitch, raising their walls in accordance and remodelling their window-heads, doorways and buttresses. To a great extent these aisle roofs survive, whilst the main roofs have been renewed.

We have only to try to imagine the church without its clearstory, and with low aisles, to realise that, compared with this earlier state, it had now become almost another building both internally and externally. To contribute to the general brightening-up of the interior during the fifteenth century they also put in the rood-screen, which still in greater part remains, though now lacking its crowning feature, the rood-loft, which overhung it towards the nave, as is indicated by the passage-way on to this loft, cut through the end of the north wall close up by the chancel arch.

Here it may be as well to note that the screen as it exists to-day stands at some 20 inches lower level than it seems to have been designed to stand in the chancel arch. This is on account of the floor of the nave having been by that much lowered, apparently

in modern days. The floors of the tower and north aisle have also been brought down to this depth, with the evident object of making the entire floor west of the chancel arch level with the threshold of the fifteenth-century main door of entrance into the south aisle. It looks as though from this south aisle floor up to the nave floor there must have been some steps, all along between the columns of the arcade, and perhaps in the same way again up from the nave level to the floor of the north aisle. That these floor-levels originally followed the fall of the site across the church, from north to south, is proved by the relative positions in the walls of doorsteps and piscinas on each side of the church. The chancel floor, too, appears to have run through level with that of the nave, at which height also the burial-chapel floor eventually came to be fixed.

In the fifteenth century the chancel had most of its windows remodelled, including the east window; and by then this church fabric had developed to the fullest extent that it was destined to attain as a mediæval structure. Probably it already possessed a south porch; at any rate, one of rather larger dimensions, and with thicker walls than the existing porch, is figured on the survey made in 1867.

In the seventeenth century there was added on to the north wall of the chancel the burial-chapel of the Hale family, now utilised as a vestry. This building is by no means the least interesting piece of work about the church. With its walling of 2-inch red bricks, and windows oak-mullioned and cinquefoil-cusped in the heads, it echoes in a pleasant way of its own the work of an earlier day and seems to indicate, on the part of its designers, a yearning after the old times past. Whether it replaces any earlier structure, and whether the arched opening of modern stonework over a raised monument, in the wall between chancel and chapel, represents in any way a mediæval original, one can only surmise. The Herts Inventory and the Victoria History date this burial-chapel as an early seventeenth-century work. Chauncy, who lived not ten miles away, and published his History in 1700, states that Colonel Wm. Hale, who died in 1688, built the chapel as a burial-place for the family. Cussans says it was built about 1680 by Wm. Hale. One would like to hear on what grounds our latest authorities agree to differ by half a century or more from the older authorities.

In the nineteenth century this church, its tower and vestry excepted, underwent extensive reparation and renewal of features and wall-faces, under Mr. Eden Nesfield, as architect. He made the survey I have alluded to. His drawings are dated December, 1867, when the contract was signed, and the work was in progress the following year.

Now for a glance back at it all, viewing it as a picture, a moving-picture, dim at first but getting clearer as it moves on; we see standing on this actual site, in this Royal Manor once held by Harold, a mason-built church of simple form, just nave and chancel most probably, dating back whether to Harold's day or to some time subsequent we do not know—a church which, as these nave arcades themselves proclaim, at any rate called for enlargement and received aisles by about the year that Richard the Lion-hearted set out for the Holy Land. Then, within the next century, there comes into view a new chancel, an expansion of an earlier one into the size and shape of that we now have, a chancel presently thrown open to wider view from the nave by the construction of the existing chancel arch about the beginning of the following century. Again, before this fourteenth century is out, further growth of the fabric takes place, now at its western end, parish ambition to own a big bell-tower, like other places, being gratified near about the time of Wat Tyler's rebellion. Following this tower we witness a striking transformation from gloom to brightness in the nave, where, by upward expansion into a clearstory together with a raising of the aisles, the effect is marvellously changed, as though in response to the cry "More height; more light!" And along with the raised walls and new roofs we note this interior now receiving its finishing touch in the shape of a rood-screen with its loft above, on which we may be sure that the best available skill and care would be focussed. Finally, by the middle of the sixteenth century, we behold the spectacle of this church of the parish, this work of the parishioners, being stripped of its furnishing and plundered of its ornaments and its bequests, but nevertheless still retained by the parishioners in continuous use as their parish church.

If I have at all succeeded in making clear my narrative as to how it all came about, from beginning to end, you will have noticed that I aim at clearness by confining my efforts to accounting for the development of the fabric in its main parts only, neglecting features and details except so far as these weigh in evidence of development. Numbers of interesting points about this building might be noticed and discussed which I have left unnoticed, as being immaterial to my main argument, to say nothing of other points of view that might be taken of the whole thing. Associations religious, æsthetic, sentimental and romantic, all cluster round our old churches. The consideration of these aspects of the subject is beyond me, and I content myself with keeping to the humble and rather prosaic business of trying to understand and explain the building as an organic structure.

SALOMON DE BROSSE AND HIS FAMILY.

By JOHN W. SIMPSON, I.S.O. [*F.*].

IN 1838 the picturesque little "rue de Longpont" at Paris, immediately behind the ancient church of St. Gervais-St. Protais, where the monks of Longpont once possessed a hospice, was rebaptised "rue Jacques de Brosse" * in honour of the architect who designed the great Renaissance frontispiece of the church in 1616. The intention of the municipality was excellent, but its historical knowledge inadequate, since the architect's name was not Jacques, but Salomon! Their mistake was pardonable, for with a singular accord the historians of Paris from Malingre, his contemporary, and the inaccurate Brice onward, have dubbed him "Jacques." D'Argenville, who prided himself on his knowledge of art and artists, Félibien, Piganiol, the usually accurate Saugrain and Jaillot, Dulaure, men of weight like Blondel and De Gisors, the historian of the Luxembourg, even so modern a writer as the Marquis de Rochegude—who ought to have known better, since Normand had corrected the error in 1893, and Read's little monograph had been printed in the *Mémoires de la Société Nationale des Antiquaires* since 1881—all have, after the exasperating method of historical writers, gravely repeated one another's mistake, until collectors of autographs came to refuse the signature of "S. De Brosse" as not being authentic! The "*Figaro*," indeed, went a step further and canonised the imaginary Jacques, referring (22nd January 1877) to an event which had taken place in the "rue Saint-Jacques de Brosse"! Much may, however, be forgiven to journalism, and especially to French journalists, whose studies of past and present Paris form an important contribution to the history of the City. His surname was, of course, treated in the free and easy way common to our ancestors—orthography was almost the last thing to lose its freedom under the rule of pedantic democracy, and we find him described as Bros, Brousse, Bosse, frequently Desbrosses, occasionally La Brosse and De la Brosse, according to the more or less slippery pen or memory of the writer.

Salomon de Brosse, to give him his right Christian, or Israelitish, name and patronymic, was a Huguenot, one of "the Religion," as they were called in his time, and was born at Verneuil-sur-Oise, in the valley between the river Oise and the Hallate forest, a tiny commune at the foot of the hill overlooking the Seine basin on which the famous château was built by Henri IV. for Henriette d'Entragues.† It may be more readily identified nowadays as being some two miles north-east of Creil, the important modern station at the junction of five lines of railway, and about equidistant from the great châteaux of Chantilly and Liancourt, to the south and north respectively, and the old town of Senlis to the east. At Verneuil was established during the later years of the sixteenth and the beginning of the seventeenth centuries, a notable colony of architects with Jacques Androuet (1) Du Cerceau at their head. All seem to have been Huguenots, a fact which, even in those embittered times, did not interfere with the free employment of their talent on both public and ecclesiastical buildings, or even, in some cases, with their holding Court appointments. The Du Cerceau, Mestivier, De La Fons, De Brosse, and Du Ry families were all more or less related by marriage, as may be seen by the rough genealogical table which I append, and their influence on the architecture of their time was paramount. De Brosse, with whom we are presently concerned, was actually engaged on the Palais du Luxembourg for the widowed Queen of Henri IV., the façade of St. Gervais-St. Protais, and the new church for the Capucin community at Coulommiers, at the time he built the Protestant "Temple" at Charenton; moreover, though the latter was burned down by the mob in 1621, popular feeling did not prevent him from continuing his work on the Arcueil aqueduct and elsewhere, a strong testimonial to his exceptional character and capacity. Of his personality, as of that of the other members of the great architect families above mentioned, very little is known; occasional glimpses of them occur in contemporary registers and other documents, but their works are in most cases their only biography. Berty,* Ch. Perrault,† D'Argenville,‡ Quatremère-de-Quincy,§ are silent as to the life of De Brosse, or mention him only to register their want of knowledge. Others give information which is obviously incorrect, stating the place of his birth as Paris, and the date of his death as 1632; they not only confound him with Guy De-la-Brosse, physician to Louis XIII., and Charles De Brosses (who lived under Louis XV.), but attribute to him works by Abraham Bosse, the engraver, published many years after Salomon's death! No portrait of him can be traced. His birthplace and the date and place of his burial are known from the registers of one of the little Protestant cemeteries of the Faubourg Saint-Germain, which occupied the site of what is now the west side of the rue des-Saints-Pères, opposite the Hôpital-de-la-Charité. The rough entry runs: "*Salomon de Brosse Nati de Verneuil ingenieur (architecte des bastimens du roy) a esté enterré le maircredi 9e jour de désembre mil VC 26 assisté de deux archers du guet.*"‖

He was a grandson of the famous Jacques (1) Androuet Du Cerceau, author of "Les plus excellents bas-

* Since 1881 it has been, with commendable caution, renamed as "rue De Brosse."

† Afterwards Marquise de Verneuil.

* *Les grands architectes Francais de la Renaissance*, 1860.

† *Les hommes illustres de la France*, 1696.

‡ *Vies des fameux architectes*, 1788.

§ *Dictionnaire historique d'architecture*, 1832.

‖ *Mémoires de la Société nationale des Antiquaires de France*, T. XLI.; article by Ch. Read, Membre résidant, to whom I have to express my indebtedness for many of my facts.

timents de France," * whose daughter Julienne married Salomon's father, Jehan de Brosse, himself a "maistre architecteur" as appears by a deed of purchase of 1568; he was probably born about 1560, and was certainly married in 1582. His wife was Fleurance Mestivier, sister of Antoine Mestivier, "architecte du Roy," who survived him (an act of sale by her in 1634 being extant), and they had seven children whose names are known; Paul, the only son, being cited as "officier des bastimens du Roy" during his father's lifetime. Paul's cousin, Marie l'Oiseleur, married Salomon de La-Fons, who continued the family tradition as "architecte-des-bastimens-du-Roy" under Louis XIII.

The De Brosses were folk of some wealth as well as position, the little domaine of Saint-Quentin came to Salomon from his father, and he is known to have also possessed the fief of Plessis-Pomeraye, near Verneuil, as well as the wood called "Largillière," in the Forêt de Hallate, through which runs the road to Senlis; he is referred to as "noble homme" in a deed signed by the Marquise de Verneuil, the usual legal designation for the commonalty being "sieur" or "honneste personne."

There is not much more known of Salomon de Brosse, head of his profession though he was, than I have set down here; but his descendants have been traced, and their names, with such dates as identify them, are given in the genealogy already referred to. The *order* of birth is in nearly every case conjectural, and where names are enclosed in brackets the actual relationship is not certain, but assumed from contemporary dates. There has been so much uncertainty and confusion about the relationship of the architect families of Verneuil-sur-Oise that I have thought it worth while to analyse and classify what has been discovered. The result is very far from final, and better antiquaries than myself will be able from time to time to add to and amend my statement. *Humani nihil*, everything is of interest which adds to our knowledge of our predecessors' lives, and I add my humble tribute to the memory of the greatest architect of his time.

* No fewer than 11 plates are devoted to the "Château de Verneuil."

CORRESPONDENCE.

The King Edward Memorial.

Whistlers Hollow, Woldingham, Surrey, 23rd February 1914.

To the Editor, JOURNAL R.I.B.A.,—

SIR,—As no such opportunity for a symbolical and historical memorial has occurred in our time, may I urge the claims of the Mall Entrance as a site for the King Edward Memorial?

The altered circumstances in regard to the Mall Entrance force our attention on it as a site. Now that a dignified approach from Trafalgar Square is to be provided by the co-operation of the Government with the London County Council and the Westminster City Council, surely the outstanding claims of this position may be now definitely considered as a worthy site for an Emperor's Memorial.

It is impossible to add anything material to the words of Lord Curzon in the accompanying letter to the *British Architect*. But I will venture to affirm that should His Majesty the King be pleased to signify his approval of the Mall site an overwhelming verdict of public opinion will follow in its favour. Professional opinion is already largely on the side of my plea, and I have good reason to believe that the only professional opinion on the Memorial Committee was largely biassed in the same direction.—I am, yours faithfully,

T. RAFFLES DAVISON [*Hon. A.*].

Lord Curzon, in the letter referred to by Mr. Raffles Davison, says:—

"I have never yet expressed an opinion on the site of the projected statue of King Edward, partly because I could not feel that I had any claim, except that of a subscriber, to be heard, partly because I believed the matter to have been settled, though in deference to what considerations, I do not know.

"Since, however, you ask my views, I have no hesitation in replying that I would greatly have preferred to see the statue of King Edward placed at the opposite end of the Mall to Buckingham Palace. In such a position the illustrious son at one end would have faced his even more illustrious mother at the other, fitly symbolising the beginning and ending of the Victorian era. Moreover, the new avenue, constructed in memory of the one, and during the reign of the other, would thus have been consecrated in its entirety to their joint memory.

"I have walked down on many occasions to the eastern end of the Mall, and, inasmuch as the monument of King Edward is, I understand, now to take the form of an equestrian statue, wondered whether it could not be placed there in a central position, as the end of the long vista.

"An alternative position would be in the circular space at the Charing Cross side of the archway, but this site, though feasible, would apparently to some extent be shut in, and the King's memorial would, so to speak, be severed from connection with that of his mother.

"As a member of the Athenæum Club, I shall, doubtless, often regard with loyal pleasure the figure of King Edward VII., by Mr. Mackennal, which, I am told, is to take the place of the present statue of Lord Napier of Magdala. But I cannot pretend to regard the site with the slightest enthusiasm, since, if the metaphor may be permitted, it is a backwater, separated from the main tide and current of London life."

The Repair of Ancient Buildings.

The Society for the Protection of Ancient Buildings,
20. Buckingham Street, Adelphi : 18 *Feb.* 1914.

To the Editor, JOURNAL R.I.B.A.,—

SIR,—I should be grateful if you would allow me space to express the general view of the Society for the Protection of Ancient Buildings toward the interesting Paper by Mr. Forsyth on the 15th December last.

It seems from the discussion that all are agreed that the main principle in the repair of an ancient building is to preserve its historic and architectural interest unimpaired, so that it may tell afterwards everything that it could tell before : and at the same time the repair should not only be permanent in itself, but should also render the building permanent. Now, to effect this last point, it may be necessary to deface the interest of architectural detail, or to obliterate the mellowing effect of time. The difficulty therefore before us is the nice adjustment of these conflicting claims.

The permanent repair of a building cannot be effected, however, without renewal of some portion of its material ; but as each part renewed reduces the historic value of the old work, it is only as a last resort that such renewal should be undertaken. There are, and it is likely there will always be, differences of opinion as to when this last resort should be exercised, but these differences cannot be serious if the main principle be constantly adhered to.

It is hoped that, before long, stone preservatives will be found having a more lasting effect than those now in use. It is clearly, then, the duty of architects at present to check this decay of stone rather than to renew the material, except where, for structural reasons, the renewal is necessary.

Not only is restraint important in the matter of inserting new materials, but it also needs fine judgment to choose suitable materials. An open mind is essential to success in this difficulty, as no rule can be made to suit all cases.

Nearly all sound building materials are of use according to circumstances. For the repair of stone the most serviceable are stone, brick, and tile. Stone has the disadvantage that most kinds are readily susceptible to the attacks of smoke and weather, and so liable to decay. Well fired and well-made tiles are known to be nearly indestructible under these conditions, while in some circumstances many other advantages are gained by their use.

The essential point, however, which should be continually before the mind of one who has an ancient building under his care, is that repair work must not be lightly undertaken.

The repair of valuable ancient buildings is perhaps the most difficult branch of architecture, and the principle to be aimed at is surely : To preserve to a building its intrinsic form and colour, and its particular quality of surface and tone.

I remain, Sir, your obedient servant,

A. R. POWYS, *Secretary.*

R.I.B.A. General Meetings.

Ruislip : 25 *Feb.* 1914.

To the Editor, JOURNAL R.I.B.A.,—

SIR,—Have those responsible for the General Meetings of the Institute considered the advisability of Papers being printed in the JOURNAL before instead of after the meetings ? This method might not be suitable for all lecturers or for all subjects, but it would often be advantageous. At present, lecturers frequently find the time at their disposal too short, and by the time a few specialist visitors and a few recognised habitués have spoken, it is time to think of trains. The subject is thus sometimes merely skimmed over.

If the Papers were printed first and the Meeting opened with discussion, the audience would, I think, be larger and not smaller, because several would come with the idea of criticising, refuting, or supporting what had been published. The debate would be more considered and fuller. The writer of the Paper would have been able to express himself more completely, and his personality would find scope in a reply which might last from 9.15 to 9.45 p.m. Hoping that some such an arrangement may be tried next session.

I am, Sir, etc.,

F. HERBERT MANSFORD, *Licentiate.*

THE EXAMINATIONS.

The Final : Testimonies of Study.

The attention of Students preparing for the Final Examination is called to an error in the announcement under the above heading in the last issue of the JOURNAL, the words " one of " having been omitted from the penultimate line. The resolution of the Board of Architectural Education is in the following terms : " That Students may submit, in lieu of one of the alternative problems, designs made by them in a recognised School of Architecture."

Architectural Pupils : Notice to Members and Licentiates.

The Council desire to suggest that intending pupils and students should be informed that they will find it extremely desirable, if not essential, to prepare for and pass the Preliminary or a similar Examination before entering architects' offices.

COMPETITIONS.

The Barnsley Townhall Competition.

Members and Licentiates of the Royal Institute of British Architects must not take part in the above competition, because the conditions are not in accordance with the published Regulations of the Royal Institute for Architectural Competitions.

By order of the Council,

IAN MACALISTER, *Secretary.*

9 CONDUIT STREET, LONDON, W., 28 *Feb.* 1914.

CHRONICLE.

R.I.B.A. Prize Drawings for Exhibition in the Provinces.

The following selection from the premiated designs and drawings in the Institute Prize Competitions will be exhibited during the next few months under the auspices of the Allied Societies :—

Royal Institute Silver Medal (*Measured Drawings*).—Drawings of San Pietro, Montorio, Rome (4 strainers), by Mr. James Bennett (under motto "Rags"), awarded the Silver Medal and £10 10s.

Soane Medallion.—Designs for an Official Country Residence for a Royal Personage in the United Kingdom: 4 strainers by Mr. H. Chalton Bradshaw (under motto "Farnesina"), awarded a Certificate of Hon. Mention and £10 10s.; 2 strainers by Mr. Gordon S. Keesing (under motto "Akarana"), and 2 strainers by Mr. Thomas Chalkley (under motto "Anchor"), each awarded a Certificate of Hon. Mention.

Pugin Studentship.—Drawings by Mr. W. Cecil Young (2 strainers), awarded the Medal and £40; drawings by Mr. Julian R. Leathart (2 strainers), awarded a Certificate of Hon. Mention.

The Tite Prize.—Designs for an Imaginative Composition in Perspective in the Italian Style for an Important Fountain: 2 strainers by Mr. Trenwith Wills (under motto "Golden Dolphin"), awarded the Tite Certificate and £30; 2 strainers by Mr. Arthur G. Shoosmith (under motto "Panama"), awarded Certificate of Hon. Mention and £10 10s.

The Grissell Prize.—Designs for a Four-Storey Dockside Warehouse: 2 strainers by Mr. Philip D. Bennett (under motto "Syrod"), awarded the Grissell Gold Medal and £10 10s.

The Arthur Cates Prize.—Drawings by Mr. J. C. Rogers (3 strainers), awarded the Arthur Cates prize of £42.

Tenth International Congress of Architects, St. Petersburg, 1915.

The Tenth International Congress of Architects will be held at St. Petersburg in the spring of 1915.

The preliminary programme of subjects for discussion is as follows :—

(1) The Responsibilities of Architects.
(2) Architects' Schedules of Remuneration.
(3) The Appointment of Official Architects to Government and Municipal Departments.
(4) Copyright as affecting Architects.
(5) Women as Architects.
(6) The Duties and Privileges of the Architects' Profession.
(7) National and International Public Competitions and the Position of an Architect placed first in an International Competition or entrusted with Work in a Foreign Country.
(8) The "Staffelbauordnung," or Regulations affecting Building Construction applicable to the Respective Zones or Districts of a Town.
(9) Cheap Dwellings.
(10) National Characteristics in Architecture.
(11) The Evolution of the Theatre during the last twenty years.
(12) The Preservation of Historical Monuments, and its Compatibility with the Economic, Hygienic, and Social Requirements of Towns.
(13) An Exhibition of Plans and Models of Modern Theatres.
(14) An Exhibition of Ancient Russian Architecture.

Of the foregoing proposals, Nos. 13 and 14 have been definitely accepted, and intending exhibitors in this country are requested to communicate as soon as convenient with Mr. John W. Simpson, Secretary of the Permanent Committee and of the British Section, at No. 9, Conduit Street, W. Observations and suggestions which may reach him with reference to the other matters for discussion will be considered by the British Section with a view to their definite adoption by the International Committee at its Assembly in May next.

Mr. Simpson will be glad to hear from British architects who may wish to contribute Papers on any of the subjects above mentioned. It should be borne in mind that the official language is French, and that if the original Paper (which may be in English) is accompanied by a French translation, it obtains wider notice and attention than if written in another language only. Arrangements will be made for the reading or presentation of Papers by architects who may be prevented from attending the Congress themselves.

The Right Appreciation of Architecture.

In an admirable leader inspired by the President's last Address to Students [JOURNAL, 14th February], *The Times* of the 14th inst. puts before its readers some elementary truths which, familiar as they now are to architects, need to be driven well home in the lay mind if architecture is ever to be rightly appreciated by those who are at once the judges and the employers of architects. Quoting the President's remark that architects have learnt to think in terms

of architecture, and that they no longer take up a style like a new coat, *The Times* says :—

Yet to the great mass of the public who take an interest in architecture at all, a style is still a system of ornament. Gothic means pinnacles and crockets and traceried windows, and Renaissance means pilasters, and Corinthian or Ionic, at the present moment especially Ionic, capitals. One man likes Gothic because of its associations, and another likes Renaissance for the same reason. Now to think in terms of architecture is to be aware that architecture is an art of use, and to judge every building in the first place by the manner in which it performs its particular function. It is to put yourself imaginatively in the position of whose who inhabit or use the building and to ask yourself whether it is convenient for their use or occupation. . . . A building must first be designed to fulfil its function ; indeed, its use is to it what sense is to words ; and, as beauty in literature is only a heightening of the sense of words, so beauty in architecture is only a heightening of functional design and should never be considered apart from that design.

Nearly all objects of use, buildings included, when they are well made of good material and when they are well adapted to their use, have a beauty of their own, which we may call natural rather than artistic, because it has not been aimed at by the maker but is rather a by-product of his good workmanship. But it is not in human nature to be content with this natural beauty of function. The designer recognises it, as he recognises the beauty of a tree or a fine animal ; and, having recognised it, he proceeds to heighten it consciously in his next design. It is at this point that he becomes an artist ; and all great and living styles of architecture have grown with this conscious heightening of the natural beauty of buildings well designed for their use. The style develops an ornament of its own ; but it is able to do that only because it is mainly concerned with structure, just as a poet can only produce his own images when he is mainly concerned with his sense. If he thinks of his images first he will make verses rather than poetry ; and if the architect thinks of ornament before use, his building may have a number of architectural features, but it will not be architecture. Thus the great mistake made by the Gothic revivalists of the last century was to think that architecture meant architectural features. They did not understand that Gothic was a style that had grown in the solution of certain structural problems and in the conscious heightening of the natural beauty of buildings in which those problems were well solved. For them there was no structural problem in Gothic, and they could no more revive it than we can revive a dead man.

Mr. Blomfield said that, in his experience, the features of Gothic were not well suited to modern conditions. We can well believe this ; for Gothic, in all its main features, was a style developed in the solution of one great structural problem peculiar to the Middle Ages. It was, in fact, essentially a religious style ; and the better it was adapted to secular purposes the less Gothic it became. What is most admirable in the secular buildings of the Middle Ages is not their Gothic features, which, indeed, are sometimes rather irrelevant ornament, but the qualities they have in common with all good building, qualities which prevailed in the Middle Ages, not because their style was Gothic, but because they were a time of great architecture. We may be sure that a medieval builder did not try to adapt the Gothic style to a secular building. He merely tried to make the best building he could for its particular purpose, and it was only in the decline of Gothic that the features which we think of as peculiarly Gothic were lavishly applied to secular architecture. Indeed, Renaissance prevailed because Gothic had become irrational. Renaissance, whatever its defects, was a style in all its features better suited than Gothic to important secular buildings just because it is a style developed in the solution of secular problems. It was a style that revived the prose of the Romans for purposes to which the exalted poetry of the Gothic was not fitted. Yet we must remember that prose has its platitudes just as poetry has its unreason, and there is a natural prejudice against the Renaissance style because, as commonly practised, it seems to consist mainly of platitudinous features. The pilaster, for instance, is not so flagrantly absurd when applied to a hotel or a Government office as the pinnacle, but it is fatally easy to make an architectural show with pilasters, to use them as a substitute for architectural thinking. The Romans spoilt many a fine building with them, and they are now a vicious trick of design into which architects fall as bad writers fall into tricks of speech. Let us have Renaissance rather than Gothic by all means ; but let it be Renaissance without pilasters, so that our architects may prove that Renaissance does not mean to them merely a stock of platitudes, but a method of building which is their own natural solution of the structural problems they have to solve.

The Preservation of St. Paul's : Appeal for £70,000.

The Dean and Chapter of St. Paul's Cathedral, with the concurrence and support of the Archbishop of Canterbury, the Bishop of London, and the Lord Mayor, appeal to the public for £70,000 to enable them to fulfil their duty of maintaining adequately the upkeep and permanent security of the Cathedral. The money is to be spent on the fabric only, and the question of the foundations is reserved for future consideration.

The Dean and Chapter state in their appeal that during the past 15 months the building has been the subject of a special inquiry, in which Mr. Mervyn Macartney, the surveyor to the fabric, has had the advantage of frequent consultation with Sir Francis Fox, Mr. W. D. Caröe, F.S.A., Mr. R. C. G. Davison, and Mr. Horace Darwin, F.R.S. Hitherto works of repair on the structure have been executed in a somewhat piecemeal fashion by funds raised from time to time when needs became urgent. Such methods are inadequate and unsatisfactory, and it is unanimously felt that steps must at once be taken to carry out a comprehensive scheme for the permanent strengthening of the fabric where it has been disturbed by foundational movements or by the great stress of the weight of the dome. The work now suggested will include the insertion of new stone, cement grouting (wherever it may be possible and expedient), and the removal of the iron which was used by Sir Christopher Wren in considerable quantities and which is the source of serious and increasing mischief to the masonry.

The Dean and Chapter have to face a constant anxiety lest underground buildings or sewerage should affect the subsoil and endanger the Cathedral ; and it is the strong conviction of all their expert advisers that no work whatever that may be undertaken on the fabric will ensure its safety if any tunnelling be permitted in its vicinity. They are further informed that the strengthening of the superstructure must be completed, or approaching completion, before anything could be done to the foundations. They think it advisable, therefore, without further delay to issue this appeal for the fabric only, and to defer the question of the foundations, in regard to which unfinished experiments are now being made, for future consideration.

The work now contemplated will take several years

to finish, and the Dean and Chapter consider it their duty to make an earnest appeal for the sum of £70,000 towards carrying it out. Contributions may be sent to the Receiver, at the Chapter House, St. Paul's Churchyard, E.C., or may be paid into Messrs. Hoare's Bank, Fleet Street, E.C.

Suggested Site for National Memorial to Drake.

The first action of the National Committee which was established some months ago to secure a memorial to Drake was to appoint an executive committee to take steps to obtain a suitable site for the memorial in London. Colonel Clifford, deputy chairman, in a letter to *The Times* states that the sub-committee appointed to interview those authorities who were in a position to assist in the matter have been unable to make any substantial advance in this direction. Opportunities have been offered which would enable them to put up a statue to Drake, but as such a memorial as this does not fulfil the views of the Committee, the offers could not be entertained. The Committee themselves, says Colonel Clifford, favour a site which offers at once a magnificent opportunity for erecting the memorial worthy of the man, and at the same time adding beauty and interest to a spot which at present is more or less neglected, viz., the space which, though flagged, is practically unoccupied at the head of the Serpentine, between the pumping station and the water. Here the Committee consider is an opportunity for the artist and the surveyor to combine in a sympathetic movement to add another beauty spot to London, which would fittingly commemorate the illustrious dead, would teach the lesson of the Great Armada, and bring home to the present and future generations that now, as then, the safety of the Empire depends upon the command of the sea.

No. 75 Dean Street.

The text of the Bill which Earl Beauchamp has introduced into the House of Lords for the preservation of No. 75 Dean Street, Soho, is now published. It will be remembered that this interesting Georgian house was saved from destruction by a preservation order issued by the Commissioners of Works on 16th January, under the authority of the Ancient Monuments Consolidation and Amendment Act, 1913. The Bill has been introduced in accordance with a provision of the Act requiring the confirmation of the order by Parliament within eighteen months.

Proposed Ministry of Art.

At a meeting of the general committee which has been considering the question of the advisability of forming a Ministry of Art, held at the R.I.B.A. Galleries, No. 9 Conduit Street, on the 17th inst., a scheme prepared by an executive committee was discussed, and, with small alterations, adopted. Among those present were: Mr. Reginald Blomfield, R.A., Sir Thomas Brock, R.A., Mr. W. R. Colton, A.R.A., Mr. A. S. Cope, R.A., Mr. E. Guy Dawber, Sir George Frampton, R.A., Mr. H. V. Lanchester, Mr. David Murray, R.A., Sir Frank Short, A.R.A., Mr. Solomon J. Solomon, R.A., Mr. H. H. Statham, Mr. W. Reynolds Stephens, Sir Aston Webb, R.A., and Mr. Herbert W. Wills.

The scheme proposes the setting up of a Ministry of Art, and it is intended to lay it before the Government as a basis for the formation of such a Ministry, the need of some such Ministry being, it is believed, generally felt. It is understood that the suggestion is that there should be a Minister at its head with a permanent secretary and a standing advisory Council of some 18 members, a certain number of members retiring each year in rotation. The members should be recognised authorities in architecture, painting, and sculpture, also in industrial design and museums, and include one antiquary, dramatist, musician, and literary man, with *ex officio* representatives of the official departments concerned. The duties of this Council would be to advise the Minister on all points pertaining to his department, which would include the advising on all æsthetic matters of public interest and legislation affecting the same; it would deal with National Museums and galleries, modern national art, industrial art, the laying out and changes in cities, streets, public buildings, parks, &c., the preservation and the amenities of towns, villages, and countryside, and the acquisition and preservation of national art treasures. This Council, it is suggested, should advise and be at the disposal of all departments of the Government on any matters on which trained artistic advice is required, and it is thought that there are many subjects continuously under consideration when such advice and guidance would be welcomed. It is also intended that the Council should, through the Minister, tender advice in matters that appear to require it.

Sanatorium Building: Local Government Board Memorandum.

The Local Government Board have issued a Memorandum prepared by their architect, Mr. Brook Kitchin, and medical officer, Dr. Newsholme, with a view to affording local authorities and others further assistance in the provision of special residential institutions in connection with permanent schemes for the treatment of pulmonary tuberculosis. The document supplements the Memorandum dated 25th February 1913, which showed in a general way how inexpensive sanatorium accommodation could be provided within a comparatively short period in order to meet any pressing need. The unit taken has been 100 beds in buildings, with 10 additional beds in shelters.

Dealing with the selection of a site, it is advised that this should be sufficiently large to permit of open-air employment of a considerable number of patients. If land is available at a low cost, it is desirable that a site of 50 acres should be provided for 100 patients, but 20 acres may suffice for 100

patients where land is difficult to obtain or its cost high. In all cases at least one-fifth of an acre per patient should be allowed.

The plan of the building depending on the stage of disease of the patients to be admitted, the cases to be accommodated are classified into groups as follows: (*A*) cases in which permanent improvement or recovery may usually be anticipated; (*B*) cases in which only temporary, though possibly prolonged, improvement may be anticipated; (*C*) advanced cases requiring continuous medical care and nursing; (*D*) cases requiring special observation.

The sleeping accommodation provided for patients is commonly of one or more of the following types: (1) Single-bedded rooms, for patients requiring a considerable amount of nursing; (2) two-bedded rooms, suitable for all types of patients except those just referred to; (3) beds on both sides of a ward as in the ordinary isolation hospital; (4) shelters, single- or double-bedded, suitable for patients in groups *A* and *B*, who are able to be up and about all day.

Accompanying the Memorandum are the following plans: (*a*) Block plan of a 100-bed sanatorium with three separate pavilions; (*b*) Block plan of a 100-bed sanatorium with a single pavilion; (*c*) Ground plan of Staff Block; (*d*) First-floor of Staff Block; (*e*) Plan of Dining-hall and Kitchen Block; (*f*) Plan of Nursing Pavilion for 36 beds; (*g*) Plan of Convalescent Pavilion for 32 beds; (*h*) Plan of two-storied Pavilion for 100 beds; (*i*) Plan of two-storied Pavilion for 100 beds (alternative design).

The accommodation should be so arranged that a floor-space of at least 64 square feet will be available for each patient; the distance between the centres of the heads of any two adjoining beds should not be less than eight feet measured along the wall behind the heads of the beds. Patients' rooms should not be less than 8 feet 6 inches high; wards should be higher, but may be carried partly into the roof and ventilated by openings in the gable end. Doors should be made on the "stable-door" pattern, so that in inclement weather the lower portion may be closed while the upper portion is left open. They should be constructed in the form of French casements with a clear opening of not less than 3 feet 6 inches, so that beds may easily be wheeled through them. Windows should preferably be of the casement pattern and be hung "to fold" without mullions. Baths should be provided on a scale of about one to twelve patients, and w.c.'s on the same scale. Spray baths may also be provided. If verandah accommodation is not adequate, day shelters, which should be of inexpensive construction, will be needed.

In view of the importance of continuous open-air treatment, patients should not be encouraged to collect in a recreation room, except for a very limited time or on special occasions: it is therefore suggested that the dining-room would suffice for purposes of recreation, lectures, etc. It will usually be unnecessary to heat the patients' quarters excepting the dining-hall and some of the rooms for patients requiring special nursing, and a system of low-pressure hot-water heating will be found most economical for this purpose. Electric lighting should be employed where electric current is available or can be economically produced. Where, owing to local circumstances, the use of brickwork would be economical, cheap bricks may often be employed faced externally, if necessary, with rough-cast or cement. Walls in exposed positions should be of hollow construction. In some districts other materials may be less expensive and may be employed, such as steel framing carrying terra-cotta slabs, or concrete slabs or blocks plastered internally and cemented externally, or timber framing lined internally with asbestic sheeting or expanded metal lathing plastered with a hard setting plaster, rough-cast or coated externally with weather-boarding chemically treated.

Consumption Hospitals: Some American Ideas.

A unique tuberculosis sanatorium is to be constructed at Collinsville, Missouri. The building, all on one floor, is to be composed of private rooms and separate suites, luxuriously furnished, but with partition walls reaching only 6½ feet high. A single high roof, covering all the apartments, will leave several feet in the clear, through which fresh air may circulate freely. Ventilation is to be had exclusively in this clear upper space. Dr. M. W. Harrison, who is erecting and will conduct this hospital, has had a tent colony for consumptives for several years.

Dr. Marcus Heyman, superintendent of the tuberculosis department of the Central Islip Hospital, Long Island, New York, advising a committee that conferred with him concerning the character of architecture for a new tuberculosis hospital, said: "My notion of an appropriate hospital for the handling of tuberculosis cases is an inexpensive frame building which can be burned to the ground every six or seven years. Fire is the only means by which the germs can be routed out of a building housing consumptives. If it were possible to expose every corner of the building to the rays of the sun, the question would be solved, but this cannot be done. If built practically, a tuberculosis hospital should be a very inexpensive affair. A frame structure is suitable, because there is no heating problem to solve."

The French Law for the Preservation of Ancient Monuments.

A Parliamentary Paper [Miscellaneous, No. 1 (1914): Cd. 7151] has just been issued giving the laws in force in Hungary and France for the preservation of ancient monuments. That for Hungary, the Law XXXIX. of the Year 1881, has been described by Prof. G. Baldwin Brown.* The French Law was only promulgated on 31st December 1913, and is the one under which the recent steps were taken in connection with the priory at Villesalem in the Vienne. It affords an interesting

* *The Care of Ancient Monuments*, p. 167.

comparison with the present English Act, passed a few months before it, showing as it does how far behind we are on the broad principle of the right of a nation to protect its historic and artistic treasures. The administrative details of the French Law will depend on a future regulation, but the law itself illustrates a greater bureaucratic control than has been found necessary as yet for the protection of monuments in England. "By the order" or "with the consent" of the Minister of Fine Arts occurs in nearly every article. In contradistinction to the English Act, no attempt is made to limit the scope of the French Law by defining the term "monument." Anything movable or immovable may be scheduled. Immovable scheduled objects include all properties already scheduled, megaliths, land containing prehistoric sites or deposits, buildings that require to be scheduled in order to isolate, disencumber, or sanitate a property scheduled or proposed to be scheduled, and public or private property scheduled by an order of the Minister of Fine Arts with the consent of the owner, or, failing his consent, by a decree of the Council of State. The notification of the proposal to schedule a property has the same effect as scheduling. A private owner can arrange conditions under which his property is scheduled, but he may be over-ridden by the decree of the Council of State. The scheduling of his property may involve the payment of compensation. Power is given to the Minister of Fine Arts, to Departments and Communes, to expropriate scheduled property or property proposed to be scheduled, and in these cases public benefit shall be declared by a decree of the Council of State. When public benefit has been declared the property may be scheduled without any further formality. A private owner must acquaint the person who acquires the property of the fact that it is scheduled, and the Minister of Fine Arts of the change of ownership; change of ownership, however, does not alter the effects of scheduling. These are, among others, that the property may not be destroyed or moved, nor may it be restored, repaired, or altered without the consent of the Minister of Fine Arts, nor may these works be carried out without the supervision of the Department of Fine Arts; that works indispensable for preservation may be carried out by the Department at the expense of the State: that failing amicable agreement with the owner the temporary occupation of the property for not more than six months may be authorised in the case of urgent works, and that no new building may be erected against scheduled property without the consent of the Minister of Fine Arts. A supplementary list is to be made of all buildings or parts of buildings which do not justify a demand that they should be scheduled. Inclusion in this list imposes on the owner the obligation of giving the prefecture fifteen days' notice of any alteration. Chapter II. deals with movable objects, whether movable in the true sense of the word or only as regards use, and Chapter III. with certain administrative matters. Under Chapter IV. the discovery of finds while excavating must be reported immediately, and the Minister of Fine Arts may require the expropriation of the land on the ground of public expediency. Chapter V. deals with penalties. The heaviest, a fine up to £400 with or without imprisonment up to three months, is reserved for the alienation or exportation of scheduled movable objects, and this is without prejudice to actions for damages. The alteration of scheduled property may lead to a fine of £60 in addition to damages. The last chapter arranges for the extension of the law to Algeria and the colonies, for the determination, after consultation with the Commission of Historic Monuments, of the details of the application of the law, and for the repeal of previous statutes. The effect of this law on the preservation of ancient monuments will depend, as with the English Act, on how the schedules are drawn up, on the energy with which it is administered, and on public opinion and interest.

W. J. Davies [*A.*].

The Replanning of Athens.

Mr. Thomas H. Mawson [*Hon. A.*] has been commissioned, on the personal recommendation of the King and Queen of the Hellenes, to prepare comprehensive plans for the extension, remodelling, and beautification of the city of Athens. The city is growing in population at a rapid rate, and the replanning will make allowance for any extension of the city's boundaries which is likely to be needed during the next half-century. In Mr. Mawson's plans provision will be made for a great new railway station to supersede all the existing termini, and also for the new Law Courts and other official buildings, new hotels, new boulevards, including a broad avenue from the city to the Piræus, and a complete park and playground system. New waterworks are also contemplated, while the replanning will also have to take into account a rehousing scheme, which will be rendered necessary by the clearing away of the hovels which have accumulated in the course of time around the base of the Acropolis.

MINUTES. VIII.

At the Eighth General Meeting (Ordinary) of the Session 1913-14, held Monday, 23rd February 1914, at 8 p.m.—Present: Mr. Ernest Newton, A.R.A., *Vice-President*, in the Chair: 14 Fellows (including 5 members of the Council), 28 Associates (including one member of the Council), 14 Licentiates, and several visitors: The Minutes of the Meeting held 9th February 1914, having been published in the Journal, were taken as read and signed as correct.

The Hon. Secretary announced the decease of James Hine, of Plymouth, elected *Fellow* in 1864 and transferred to the list of *Retired Fellows* in 1907; and of Ernest Barraclough Crossley, of Nottingham, *Associate*, elected in 1907.

John Henry Cossar, *Licentiate*, attending for the first time since his election was formally admitted by the Chairman.

Mr. Paul Waterhouse [*F.*] having read a paper entitled "London Railway Stations," and illustrated it by lantern slides, a discussion ensued and a vote of thanks was passed to the author by acclamation.

The proceedings closed at 10 o'clock.